2013-1142, -1143, -1144

(INTERFERENCE NOS. 105,801, 105,802, 105,803)

In The

United States Court of Appeals

For The Federal Circuit

C. DOUGLASS THOMAS and ALAN E. THOMAS,

Appellants,

v.

JACK D. PIPPIN,

Appellee.

APPEALS FROM THE UNITED STATES PATENT AND TRADEMARK OFFICE, PATENT TRIAL AND APPEAL BOARD.

CORRECTED BRIEF OF APPELLANTS

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CERTIFICATE OF INTEREST

Counsel for Appellants, C. Douglass Thomas & Alan E. Thomas, certifies the following:

1. The full name of every party or amicus represented by us is:

   C. Douglass Thomas
   Alan E. Thomas

2. The names of all real parties in interest (if the party named in the caption is not the real party in interest) represented by us are:

   IpVenture, Inc.

3. All parent corporations and any publicly held companies that own 10% or more of the stock of the party or amicus curiae represented by us are:

   None

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by us in the trial court or agency or are expected to appear in this Court are:

   C. Douglass Thomas
   Neifeld IP Law, PC
   Rick Neifeld
   Robert Hahl
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STATEMENT OF RELATED CASES

No other appeal in or from the same civil action or proceeding in the lower court or body was previously before this Court or any other appellate court. Further, other than potentially the two district court actions listed below, there is no case known by counsel to be pending in this or any other court that will directly affect or be directly affected by this Court's decision in the pending appeal.

(1) IPVENTURE, INC. v. ASUSTEK COMPUTER INC. et al., NDCA, Case No. 3:12-cv-04143 JSW.

(2) IPVENTURE, INC. v. LENOVO GROUP, LTD. et al., DDE, Case No. 1:11-cv-00588 RGA.

JURISDICTIONAL STATEMENT

The Board of Patent Appeals and Interferences (now renamed as the Patent Trial and Appeal Board) invoked and assumed jurisdiction over the patent interference proceedings involved herein pursuant to 35 U.S.C. § 135.

The United States Court of Appeals for the Federal Circuit has jurisdiction over this appeal pursuant to 35 U.S.C. § 141.

The notices of appeal in Appeal Nos. 2013-1142, 2013-1143, and 2013-1144 from the Board's corresponding final judgments and decisions issued on September 19, 2012 in Patent Interference Nos. 105,801, 105,802 and 105,803, respectively, were timely filed by Appellants in accordance with 35 U.S.C. § 142, Rule 15(a) of the Federal Rules of Appellate Procedure, and Rule 15(a) of the Federal Circuit Rules on November 19, 2012.

STATEMENT OF THE ISSUES

1. Whether the Patent Trial and Appeal Board erred in preventing Thomas from challenging the patentability of Pippin's sole claim (and the Count) on the grounds of same-invention type double patenting under 35 U.S.C. § 101?

2. Whether the Patent Trial and Appeal Board erred in holding that all Thomas' patented claims were to be canceled as not shown by Thomas to be patentably distinct from the Count, after the Board expressly limited Thomas' ability to defend its patented claims and/or after the Board applied presumptions and burden on proof against Thomas' patented claims?

STATEMENT OF THE CASE

This case is an appeal from three separate patent interference proceedings (Interference Nos. 105,801, 105,802 and 105,803) before the Patent Trial and Appeal Board ("Board"). The three interference proceedings involve seven patents of Thomas and one patent application of Pippin.

These patent interference proceedings were instituted at the urging of Pippin in a belated effort to attack Thomas' patents. Thomas' patents generally concern power and/or thermal management for computers. Pippin's patent application pertains to an integrated circuit, such as a microprocessor, having an integral programmable thermal sensor that triggers an interrupt based on thermal conditions.

Thomas was deemed the junior party and Pippin was deemed the senior party in the interference proceedings. Although priority of invention (defined by the Count) was not disputed, the Board elected to continue the patent interference proceedings.

During the preliminary stages of the interferences, Thomas requested authorization to move for unpatentability of Pippin's sole claim in Pippin's patent application on the ground of double patenting. The Board denied Thomas the right to file a motion that Pippin's sole claim was invalid for double patenting.

Additionally, at the preliminary stages of the interferences, Thomas also made requests to move to designate its claims involved in the interferences as not corresponding to the Count. In doing so, Thomas identified various features across the seven Thomas patents that were involved in the three interference proceedings, in support of its request to designate its claims as not corresponding to the Count. The Board, however, limited the claim features that Thomas was authorized to use in any efforts to patently distinguish its claims from the Count.

Thomas accordingly filed motions to dedesignate certain claims from the Count in view of the limitations imposed by the Board. Subsequently, the Board denied all of Thomas motions to dedesignate claims, entered judgment against Thomas, and ordered that all of Thomas' claims be canceled.

Thomas, being completely dissatisfied, has timely filed appeals with this court to seek justice. Now, by this appeal brief, Thomas requests that the Board's decisions be reversed and that the Board's judgments be vacated.

STATEMENT OF FACTS

I. THE THOMAS PATENTS

C. Douglass Thomas and his father Alan E. Thomas (hereafter "Thomas"), as inventors, have obtained many patents pertaining to innovations concerning power and/or thermal management of computers. Seven of these patents are involved in the three interference proceedings now on appeal. These U.S. Patents ("Thomas Patents") include: 5,752,011; 5,974,557; 6,216,235; 6,487,668; 7,167,993; 7,293,186; and 7,418,611. (JA 82-162, 184-243). All the Thomas patents claim priority to an original Thomas patent application filed in June 1994.

II. THE PRE-INTERFERENCE PROCEEDINGS

Pippin has a pending patent application, U.S. patent application 10/464,482, which has been pending for nearly ten (10) years. (JA 260-1451, 2188-2396, 1729-1730). On June 19, 2003, Pippin initially sought to provoke one or more interferences with several of the Thomas patents by filing a request for interference which included claims copied from several of the Thomas patents. (JA 82-162, 184-243). The patent examiner denied this request because the examiner rejected the copied claims under 35 U.S.C. § 135(b).

On May 24, 2010 (nearly seventeen (17) years since its original parent application was filed), Pippin canceled all its originally copied claims and introduced a reformulated claim resurrected from its earlier patent filings and filed

a subsequent interference request to again attempt to provoke an interference with the Thomas patents. (JA 1325-1347, esp. 1332). Eventually, in view of the various *ex parte* arguments and self-serving declarations filed with the subsequent interference request, in April 2011, the examiner found Pippin's resurrected claim allowable and accepted Pippin's interference allegations and thus forward Pippin's patent application to the Board for review. (JA 1357-1439).

III. THE INTERFERENCE PROCEEDINGS

Due to Pippin's delays and difficulties in convincing the patent examiner to approve Pippin's interference request, by the time the interferences were initiated, seven of Thomas patents were involved in the interferences. The Board declared three interferences in April 2011 – interference proceeding 105,801 had one patent, and interference proceedings 104,802 and 105,803 each involved three patents. Within these seven patents there were a total of 213 claims. (JA 1731-1752).

The Count for each of the interferences corresponds to Pippin's sole claim (Pippin's claim 34) in Pippin's patent application. (JA 244). Among other things, Thomas proposed to the Board, in its list of proposed motions, that it would argue Pippin's claim 34 was unpatentable to Pippin due to double patenting. (JA 2062-2104, esp. 2063, 2078, 2092). The APJ refused to permit Thomas to file such a motion. (JA 2142-2104).

Thomas also proposed, in its list of proposed motions, that it would argue to dedesignate its claims from the Count. (JA 2062-2104). The APJ imposed substantive restrictions on the arguments that Thomas was authorized to make in such motion. These substantive restrictions limited Thomas' ability to argue its motion to dedesignate its claims from the interferences. The detrimental impact of these unfair restrictions in each interference proceeding is discussed below.

IV. THE BOARD'S ACTIONS

During the interference proceedings, the Board issued various orders that limited preliminary motions, decided motions, and rendered judgments.

A. BOARD'S ACTIONS CONCERNING PRELIMINARY MOTIONS

At the preliminary motion phase, the APJ hindered Thomas by issuing orders from the Board that limited Thomas' ability to defend its patents.

Although various proposed motions were listed, only relevant motions to this appeal will be discussed. Specifically, of relevance to this appeal were the proposed motions for: (1) judgment that Pippin's claim 34 is unpatentable under 35 U.S.C. § 101 (same-invention type double patenting); and (2) motion to designate all of Thomas' claims as not corresponding to the count (i.e., as pertaining to a different invention).

As to these proposed motions, the APJ acting for the Board denied the proposed motion for judgment that Pippin's claim 34 is unpatentable under 35

U.S.C. § 101, and authorized the proposed motion for dedesignation of Thomas' claims but only with respect to limited authorized features. (JA 2142-2166). The Board also indicated that Thomas was not authorized to file a priority motion, since priority was not disputed. (JA 2143, 2152, 2160).

Thomas later filed motions to designate certain claims as not corresponding to the Count within the limited bounds permitted by the Board. (JA 2411-2558). The Board eventually denied Thomas' motions to designate certain claims as not corresponding to the Count and issued judgments against Thomas' patents. (A 1-81; JA 1-81). In so doing, the Board ordered cancellation of all of Thomas' claims, even those claims that Thomas was not permitted to discuss.

B. BOARD'S ACTIONS REGARDING MOTIONS TO DEDESIGNATE CLAIMS

More specifically, as to motions to dedesignate claims, the APJ plagued Thomas with specific orders that limited Thomas' ability to pursue its motions to designate claims as not corresponding to the Count. Although the nature of the restrictive orders are similar, each interference proceeding is separately discussed below.

(i) INTERFERENCE PROCEEDING 105,801

As to Interference Proceeding 105,801, the Board's prior order concerning a motion to dedesignate claims stated:

> It is ORDERED that Thomas is authorized to file a motion to designate its claims 1-32 as not corresponding

> to the count, but only on the basis of numbered features 1, 6, 17, 31, 39, 40, and 97 ….

Interference No. 105,801, Paper 31, 6/16/2012, page 7. (JA 2143).

Likewise, in the eventual decision by the Board on the motion to dedesignate claims, the Board reiterated the limitations imposed by its prior order by stating:

> Thomas requested authorization to file a motion to designate its involved claims as not corresponding to the count, citing 113 allegedly distinguishing features of its involved claims. Paper 26. Thomas was ordered to limit its list to a reasonable number of limitations and authorized to file a motion to designate its involved claims as not corresponding to the count only on the basis of numbered features 1, 6, 17, 31, 39, 40, and 97 in Thomas's list.

Interference No. 105,801, Paper 76, 9/19/2012, page 2. (A 5; JA 5).

Thus, it is undeniable that the Board limited Thomas' ability to dedesignate claims from corresponding to the Count. Per the Board's order, Thomas was permitted to use only features 1, 6, 17, 31, 39, 40, and 97.

(ii) INTERFERENCE PROCEEDING 105,802

As to Interference Proceeding 105,802, the Board's prior order concerning a motion to dedesignate claims stated:

> It is ORDERED that Thomas is authorized to file a motion to designate all of its involved claims, claims 1-47 of Patent 5,974,557; claims 1-54 of Patent 6,216,235; and claims 1-52 of Patent 6,487,668, as not corresponding to the count, but only on the basis of numbered features 1, 6, 7, 9, 11, 12, 14, 15, 17, 18, 19 21, 24, 86, 93, and 98 ….

Interference No. 105,802, Paper 25, 6/16/2012, page 6. (JA 2156). Subsequently, on July 14, 2011, in response to an additional request, the Board further ordered that feature 46 was authorized (for claims 12 and 49 of the '668 patent), features 62 and 63 were authorized (for claim 4 of the '235 patent), and feature 67 was authorized (for claim 7 of '235 patent), and feature 69 was authorized (for claim 24 of '235 patent). (JA 2396A-2396C).

In the eventual decision by the Board on the motion to dedesignate claims, the Board reiterates the limitations imposed by the prior order by stating:

> Thomas requested authorization to file a motion to designate its involved claims as not corresponding to the count, citing 113 allegedly distinguishing features of its involved claims. Paper 22. Thomas was ordered to limit its list to a reasonable number of limitations and authorized to file a motion to designate its involved claims as not corresponding to the count only on the basis of numbered features 1, 6, 7, 9, 11, 12, 14, 15, 17, 18, 19, 21, 24, 86, 93, and 98 in Thomas's list.

Interference No. 105,802, Paper 70, 9/19/2012, page 2. (A 30; JA 30).

Thus, it is undeniable that the Board limited Thomas' ability to dedesignate claims from corresponding to the Count. Per the Board's order, Thomas was permitted to use only features 1, 6, 7, 9, 11, 12, 14, 15, 17, 18, 19, 21, 24, 86, 93, and 98 (though limited use of features 46, 62, 63, 67 and 69 was apparently also permitted).

(iii) INTERFERENCE PROCEEDING 105,803

As to the Interference Proceeding 105,803, the prior order concerning a motion to dedesignate claims stated:

> It is ORDERED that Thomas is authorized to file a motion to designate all of its involved claims, claims 1-29 of Patent 7,167,993, claims 1-17 of Patent 7,293,186, and claims 1-31 of Patent 7,418,611, as not corresponding to the count, but only on the basis of numbered features 1, 5, 14, 15, 28, 49, 85, 103, 105, 106, 107, and 109 ….

Interference No. 105,803, paper 23, 6/16/2012, page 6. (JA 2164).

Subsequently, on July 14, 2011, in response to an additional request, the Board further ordered that use of the requested additional features, namely, features 46 and 51, to dedesignate claims was denied.[1] (JA 2398).

In the eventual decision by the Board on the motion to dedesignate claims, the limited authorized feature set was used, although the limited authorized feature set was not reiterated.

Again, it is undeniable that the Board limited Thomas' ability to dedesignate claims from corresponding to the Count. Per the Board's order, Thomas was permitted to only use features 1, 5, 14, 15, 28, 49, 85, 103, 105, 106, 107, and 109.

[1] See supra footnote 14.

C. BOARD'S DECISIONS AND JUDGMENTS

Eventually, on August 1, 2001, Thomas filed motions in each of the three pending interferences to designate claims as not corresponding to the Count. (JA 2411-2558). In doing so, given the severe restrictions on use of authorized features, Thomas was forced to argue only a limited set of claims with respect to only isolated authorized features. On September 19, 2012, given the restrictive orders and the presumptions applied in favor of Pippin, the Board denied these motions. The Board then entered judgments against Thomas and ordered cancellation of all of Thomas' patented claims since all claims were deemed presumptively corresponding to the Count. (A 1-81; JA 1-81). Thomas now appeals these decisions and judgments of the Board as being erroneous.

SUMMARY OF THE ARGUMENT

The Count for all three interference is identical to claim 34 of Pippin's interfering application, U.S. Patent Application No. 10/464,482. The Board erred in summarily dismissing Thomas' requested motion to challenge the patentability of claim 34 of Pippin's interfering application on double patenting grounds. Thomas submits that Pippin is not entitled to a patent for its claim 34 of Pippin's interfering application because such a claim is unpatentable to Pippin due to double patenting. In particular, Pippin's claim 34 is statutorily barred because Pippin already patented the same invention in U.S. Patent 6,975,047. The Count of the interferences is likewise unavailable to Pippin and, since Pippin's interfering application has no other claims, the Board lacked jurisdiction over any of the interferences. Consequently, all three interferences are improper and should not have been initiated.

The Board also erred in failing to perform an adequate patentability evaluation of Thomas' claims as compared to the Count, as required by established law on patentability (35 U.S.C. § 103(a)). The Board unjustly and unlawfully ordered the patentability evaluation to be limited to only those claim features authorized for use by the Board. In so doing, the Board denied any patentability evaluation on many of Thomas' claims. Additionally, for those claims that the Board did permit some consideration, the Board restricted consideration to only

isolated ones of the authorized claim features and thus did not evaluate the claims as a whole as required under 35 U.S.C. § 103(a). Further still, the Board applied a presumption of unpatentability over the Count against Thomas' already patented claims and placed the burden of proof on Thomas to defend the validity of its own patents over the Count.

In view of these errors, Thomas requests this court to reverse the Board's decisions and vacate of the Board's judgments.

ARGUMENT

I. STANDARD OF REVIEW

The court reviews the Board's legal conclusions without deference, or de novo. *In re Applied Materials*, 692 F.3d 1289 (Fed. Cir. 2012). This appeal involves issues concerning double patenting, statutory construction, and obviousness. Double patenting is a question of law and is reviewed without deference. *Perricone v. Medicis Pharmaceutical Corporation*, 432 F.3d 1368, 1372 (2005) (citing *Georgia-Pacific Corp. v. U.S. Gypsum Co.*, 195 F.3d 1322, 1326 (Fed. Cir. 1999)). The Board's construction of 35 U.S.C. § 135 is reviewed de novo, as statutory interpretation is a question of law. *In re Berger*, 279 F.3d 975, 980 (Fed. Cir. 2002). The Board's ultimate obviousness decision is also reviewed de novo but review of the Board's underlying factual findings are reviewed for substantial evidence. *In re Klein*, 647 F.3d 1343, 1347 (Fed. Cir. 2011).

Additionally, when reviewing an action of the Patent Trial and Appeal Board (PTAB) (hereafter the "Board"), the action of the Board will be set aside if arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law, and factual findings of the Board will be set aside if unsupported by substantial evidence. *Dickinson v. Zurko*, 527 U.S. 150, 152, 119 S. Ct. 1816, 144

L. Ed. 2d 143 (1999); *Pioneer Hi-Bred Int'l. Inc. v. Monsanto Technology, LLC*, 671 F.3d 1324, 1327 (Fed. Cir. 2012).

II. FAILURE OF BOARD TO PERMIT CONSIDERATION OF DOUBLE PATENTING WAS LEGAL ERROR AND AN ABUSE OF DISCRETION

A. RELEVANT FACTUAL SUMMARY

During the interference proceedings before the Board, Thomas advised the APJ of its intent to challenge the Count as unpatentable to Pippin on the grounds of same-invention type double patenting as well as obviousness-type double patenting. (JA 2063, 2078, 2092). The APJ permitted Pippin to enter terminal disclaimers to, according to the APJ, moot the obviousness-type double patenting challenge. (JA 2146, 2154, 2162). Unfortunately, however, the APJ also summarily denied Thomas' ability to pursue the same-invention type double patenting challenge. Presumably, the APJ felt there was no merit to the same-invention type double patenting challenge. Specifically, the APJ acting for the Board issued an order which expressly stated: "It is ORDERED that Thomas is not authorized to file a motion alleging unpatentability of Pippin's claim 34 under 35 U.S.C. § 101, for same-invention type double patenting." As explained below, the APJ's order represents an incorrect understanding of not only the law of double patenting but also the scope of the Count.

B. INTRODUCTION

Thomas submits that the Board made an error of law and/or abused its discretion in denying patentee the opportunity to pursue a same-invention type double patenting attack against Pippin's claim 34, which is also the Count. As demonstrated below, there is a solid legal basis to conclude that the Count is claiming the "same invention" that Pippin previously claimed in an earlier granted patent to Pippin (which Pippin failed to timely disclosed to the examiner). As further explained below, the legal test for same-invention type double patenting and application of the legal test to Pippin yields a conclusion that Pippin's claim 34, and thus the Count, is not patentable to Pippin due to same-invention type double patenting.

C. LEGAL TEST

Double patenting is a question of law and is reviewed without deference. *Perricone,* 432 F.3d at 1372. Additionally, since the double patenting issue was summarily dismissed by the Board, evaluation of its merits should be treated with all reasonable inferences in Thomas' favor. *Cf. Sun Pharmaceutical*, 611 F.3d at 1384 (Fed. Cir. 2010) ("A court considering summary judgment must draw all reasonable inferences in favor of the nonmovant.").

The often cited test for same-invention type double patenting comes from *Application of Vogel*, 422 F.2d 438, 441 (CCPA 1970), which stated:

> The first question in the analysis is: Is the same invention being claimed twice? 35 U.S.C. § 101 prevents two patents from issuing on the same invention. See, e.g., *In re Boylan*, 392 F.2d 1017, 55 CCPA 1041 (1968).

As such, the subject matter being claimed in claims of a former patent should be compared to claims in a later patent or application for a patent. If the compared claims are determined to be the "same," then the later claims are invalid under same-invention type double patenting.

The analysis for same-invention type double patenting thus requires an analysis of claims to examine whether or not they are for the same invention. Importantly, as specifically noted in *Application of Vogel*, "claims may be differently worded and still define the same invention." *Application of Vogel*, 422 F.2d at 441.[2] The analysis for same-invention type double patenting was explained in *Application of White*, 405 F.2d 904, 906 (CCPA 1969), which stated:

> The sole issue of importance in these double patenting cases is whether the applicant is attempting to twice claim the same invention, or whether he is claiming different inventions. The analysis of whether one invention has been twice claimed requires a factual inquiry into whether the claims of the application are directed to the same subject matter, or invention, as the claims of the patent. If there be any substantive difference, and **not merely a difference in language,** then the inventions are not the same no matter how small

[2] "A good test, and probably the only objective test, for 'same invention,' is whether one of the claims could be literally infringed without literally infringing the other. If it could be, the claims do not define identically the same invention." *Application of Vogel*, 422 F.2d at 441.

> or how obvious those differences may be. (emphasis added).[3]

In deciding whether there is same-invention type double patenting, the reviewing court will consider degree of overlap and conflict between claims. *In re Longi*, 759 F.2d 887, 893 (Fed. Cir. 1985); *In re Hass*, 831 F.2d 306 (Fed. Cir. 1987) (unpublished opinion).

It is axiomatic that claims must be construed before being evaluated. This court has, on several occasions, indicated that claim construction is a necessary initial step in the analysis of obviousness-type double patenting. *Sun Pharmaceutical*, 611 F.3d at 1385; *Pfizer*, 518 F.3d at 1363 ("court "construes the claim[s] in the earlier patent and the claim[s] in the later patent…"). Hence, claim construction is likewise an initial step in the analysis of "same invention" type double patenting.

Unfortunately, the Board summarily dismissed Thomas' same-invention type double patenting challenge without merit and did so without any semblance of claim construction. In contrast to the Board's perception, the law of same-invention type double patenting does not require that claims being evaluated be identically written or duplicated. Instead, the law notes that what is important is whether the scope of the claims is the same. *Application of Vogel*, 422 F.2d at 441

[3] Recently, the Board cited *Application of Vogel* with approval in *Ex Parte Jason Sodergren*, Appeal No. 2009-006337, 2010 WL 2256225 (2010)("claims may be worded differently and still define the same invention").

("claims may be differently worded and still define the same invention"). Consequently, the Board applied an incorrect legal test as to same-invention type double patenting and in doing so prejudiced Thomas by denying Thomas (patentees) the ability to attack Pippin's entitlement to Pippin's claim 34, and thus the Count, in the interference proceeding.

D. APPLICATION OF THE LEGAL TEST TO THE COUNT

The Count for all three interferences was identical to claim 34 of Pippin's allegedly interfering application U.S. Patent Application No. 10/464,482 ("Pippin's '482 application"). Thomas submit that Pippin is not entitled to obtain a patent for claim 34 of Pippin's '482 application involved in these interferences because the claim is unpatentable due to same-invention type double patenting. Consequently, the Count (which is identical to Pippins' claim 34) is likewise unpatentable to Pippin and thus all three interferences are improper and should never have been initiated.

(i) BOARD'S RATIONALE FOR FAILING TO CONSIDER DOUBLE PATENTING WAS LEGAL ERROR

In view of Thomas' challenge to Pippin's ability to pursue the Count, and thus the propriety of the interferences, the APJ (and thus the Board) committed legal error by summarily dismissing consideration of same-invention type double patenting and ordering that no further consideration would be permitted.

Thomas sought, before the Board, to show that Pippin's claim 34 (the Count) was unpatentable to Pippin because Pippin had previously patented claim 24 in Patent 6,975,047 for the same invention. (JA 163-183) The APJ's stated rationale for denial was that:

> Pippin's claim 34 is clearly different from that of either of claim 23 or 24 of Patent 6,975,047, and …. Claim 24 of Patent 6,975,047 requires the clock circuitry to be incorporated within the microprocessor." Pippin's claim 34 has no such requirement.

Order – Authorizing Motions, Patent Interference No. 105,801, paper 31, June 16, 2012, page 4.[4] (JA 2145)

[4] The entirety of the APJ's commentary on the proposed motion concerning same-invention type double patenting was as follows:

> **Item 3** on Thomas' proposed motions list pertains to a motion alleging unpatentability of Pippin's claim 34 under 35 U.S.C. § 101, for same-invention type double patenting. It is noted that the scope of Pippin's claim 34 is clearly different from that of either claim 23 or 24 of Patent 6,975,047. Thomas refers, instead, to a combination of claims 23 and 24 in Patent 6,975,047. Even that, however, is clearly not true. Claim 24 of Patent 6,975,047 requires the clock circuitry to be incorporated within the microprocessor. Pippin's claim 34 has no such requirement. In any event, Patent 6,975,047 does not contain a claim which is the same as the combination of claims 23 and 24 of that patent. Counsel for Thomas explained that he could imagine no device which would infringe Pippin's claim 34 without also infringing a claim in Patent 6,975,047. When asked to produce authority which indicates that that is the standard for determining same-invention double patenting under 35 U.S.C. § 101, counsel indicated that he was aware of none.

The Board failed to properly understand claim 34 (the Count) of Pippin's '482 application. The Board essentially concluded that there is no possibility that claim 34 could require its recited clock circuitry to be incorporated into the microprocessor. What claim 34 means is a matter of claim construction, which is a sophisticated legal conclusion. The Board, however, did not indicate that it performed any consideration of the specification, other claims, prosecution history or other evidence to reach its conclusion. Instead, the Board simply noted a wording difference with respect to the "clock circuitry."

Thomas should have been permitted to properly establish a claim construction for claim 34 to show the Board that indeed the recited clock circuitry of claim 34 is required to be incorporated into the microprocessor, just as it is recited in Pippin's previously patented claim 24 in patent 6,975,047. Hence, the Board's rationale was premised on a misunderstanding of the law of same-invention type double patenting. The required analysis requires a determination of whether the claims define the "same" invention, not whether the wording of the claims are identical. *Application of Vogel*, 422 F.2d at 441 ("claims may be differently worded and still define the same invention").

Accordingly, by failing to adequately construe the claims as well as by failing to apply the appropriate legal test, the Board committed legal error when it summarily concluded that a same-invention type double patenting challenge to

claim 34 was without merit. Nevertheless, Thomas further establishes below that as a matter of law, without consideration of extrinsic evidence, Thomas' same-invention type double patenting challenge has justifiable merit requiring remand to the Board for meaningful consideration and development of an administrative record.

(ii) FAILURE OF BOARD TO PERMIT CONSIDERATION OF DOUBLE PATENTING WAS LEGAL ERROR

The Board committed legal error in not allowing Thomas to defend their patents through challenging that Pippin's claim 34, the Count, as not being patentable to Pippin due to same-invention type double patenting. Since the Board's denial of any consideration of same-invention type double patenting was induced at a preliminary stage, no evidence or arguments were permitted by Thomas and no findings or meaningful conclusions were reached by the Board.

It is explained below, starting with the following table, why Pippin's claim 34 is unpatentable to Pippin due to same-invention type double patenting. Specifically, the following table provides a detailed comparison of Pippin's claim 34 ("Sole Count") with Pippin's prior issued claim 24 ("Prior Claim") of U.S. Patent No. 6,975,047.

Limitation	**Sole Count (claim 34 of U.S. Application No. 10/464,482)**	**Prior Claim (claim 24 of U.S. Patent No. 6,975,047 [actually claims 22 & 24])**	**Comparison**
(a)	A computer system comprising:	A computer system comprising:	**Identical**
(b)	an active cooling device;	an active cooling device;	**Identical**
(c)	a microprocessor comprising:	a microprocessor comprising:	**Identical**
(d)	a register storing a register value corresponding to a threshold temperature;	a register *incorporated into the microprocessor, the registe*r storing a register value corresponding to a threshold temperature;	**Identical in scope.** While the Count does not contain the phrase "incorporated into the microprocessor" such language is redundant since in both the Prior Claim and the Count, the register is recited as being included in the microprocessor (see limitation (c)).
(e)	a programmable thermal sensor receiving the register value, wherein the programmable thermal sensor generates a first interrupt signal if a microprocessor temperature exceeds the threshold temperature,	a programmable thermal sensor *incorporated into the microprocessor, the thermal sensor* receiving the register value, wherein the programmable thermal sensor generates a first interrupt signal if a microprocessor temperature exceeds	**Identical in scope.** While the Count does not contain the phrase "incorporated into the microprocessor" such language is redundant since in both the Prior Claim and the Count, the programmable thermal sensor is recited as being

		the threshold temperature, and	included in the microprocessor (see limitation (c)).
(f)	wherein the active cooling device is activated in response to the interrupt signal, and	wherein the active cooling device is activated in response to the interrupt signal.	**Identical**
(g)	wherein the active cooling device comprises a fan; and	(see limitation (b))	**Identical in scope through interpretation of claims.** Both the Prior Claim and the Count recite an active cooling device. In view of the specification and prosecution history, the active cooling device would be understood by one skilled in the art to mean an active cooling device which is or includes a fan.
(h)	clock circuitry for providing a clock signal for the microprocessor,	~~24. The computer system of claim 22 further comprising~~ clock circuitry *incorporated into the microprocessor* for providing a clock signal for the microprocessor,	**Identical in scope.** While the Count does not contain the phrase "incorporated into the microprocessor" such language is redundant since: (i) the "clock circuitry" is interpreted as being within the microprocessor (it is the same "clock

			circuitry" and same recited function) in both the Count and the Prior Claim); and/or (ii) the "clock circuitry" is interpreted as being at least within the microprocessor (indeed, it is technically so required).
(i)	wherein a frequency of the clock signal is reduced in response to the first interrupt signal.	wherein a frequency of the clock signal is reduced in response to the first interrupt signal.	**Identical**

As noted in the table, the Count has limitations (a) – (i). Of which, there can be no question that limitations (a), (b), (c), (f) and (i) of the Count are all identically present in the Prior Claim. The remaining limitations (d), (e), (g) and (h) of the Count, despite non-identical language, have the same scope as the Prior Claim.

As to elements (d), (e) and (h), these limitations of the Count are worded slightly different than the corresponding limitations in the Prior Claim. The slight differences with respect to each limitation is simply that the expression "*incorporated into the microprocessor*" is not expressly recited in the Count. However, the expression "*incorporated into the microprocessor*" for such limitations is provided elsewhere in the Count. Hence, despite any wording

differences, each of the elements (d), (e) and (h) are identical in scope. Further, element (g) also presents a wording difference concerning a fan but such is also not a meaningful limitation on the Count.

If the court desires to determine that the scope of these corresponding limitations are potentially of the same scope or indeed of the same scope, further analysis is provided below to support such a legal conclusion.

(i) Element (d)

The wording difference concerning element (d) is simply the expression "incorporated into the microprocessor". While element (d) of the Count does not contain the phrase "incorporated into the microprocessor" (which is present in the Prior Claim), such language is redundant since, in both the Prior Claim and the Count, the register is recited as being included in the microprocessor (see limitation (c)). Consequently, the scope of element (d) is the same in both the Count and the Prior Claim.

(ii) Element (e)

The wording difference of element (e) is simply the expression "incorporated into the microprocessor." While element (e) of the Count does not contain the phrase "incorporated into the microprocessor" (which is present in the Prior Claim), such language is redundant since, in both the Prior Claim and the Count, the programmable thermal sensor is recited as being included in the

microprocessor (see limitation (c)). Consequently, the scope of element (e) is the same in both the Count and the Prior Claim.

(iii) Element (h)

The wording difference of element (h) is simply the expression "incorporated into the microprocessor." While the Count does not contain the phrase "incorporated into the microprocessor" such language is redundant since at least one of: (a) the "clock circuitry" is interpreted via its specification as being within the microprocessor (it is the same "clock circuitry" and same recited function in both the Count and the Prior Claim), and (b) the "clock circuitry" is interpreted as being at least within the microprocessor (indeed, it is technically so required).

As to point (a), the clock circuitry is determined to be within the microprocessor. The clock circuitry functions the same in both the Count and the Prior Claim, and would also be construed as having the same corresponding structure. The Count does not in any way indicate that it was not intended to be provided within the microprocessor. Although "clock circuitry" itself is not defined in the Count, it is the same in both the Count and the Prior Claim since such claims are also provided in related sister cases. *Advanced Cardio and Guidant v. Medtronic*, 182 Fed. Appx 994, 998-999 (Fed. Cir. 2006, unpublished) (established rule of claim interpretation dictates that like terms should be construed

consistently across related cases)(citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005).

As to point (b), the clock circuitry functions the same in both the Count and the Prior Claim and would be construed as having the same corresponding structure. The Pippin specification also indicates that its "clock circuitry" is within the microprocessor. For example, the Pippin specification for U.S. Patent No. 6,975,047 at column 2, lines 42-49 clearly states.

> The programmable thermal sensor of the present invention is implemented in a microprocessor. In addition to the programmable thermal sensor, the microprocessor contains a processor unit, an internal register, microprogram and clock circuitry. The processor unit incorporates the functionality of any microprocessor circuit. The clock circuitry generates a system clock for operation of the microprocessor." (emphasis added).

The specification for Pippin's '482 application in this interference is a sister application to the patent application granted as U.S. Patent No. 6,975,047. Thus, Pippin's '482 application shares a common parent application and the same disclosure. (JA 275-306). Consequently, the scope of element (h) is the same in both the Count and the Prior Claim.

(iv) Element (g)

The wording difference of element (g) is that the Count expressly recites "wherein the active cooling device comprises a fan" but the Prior Claim does not.

However, the Prior Claim need not expressly recite that "the active cooling device comprises a fan" because such limitations are already inherently part of the Prior Claim. This results from interpretation of the claim phrase "active cooling device."[5] In construing, the phrase "active cooling device", the specification provides guidance. Column 12, lines 52-54 of Pippin's U.S. Patent No. 6,975,047, which contains the Prior Claim, states: "The active cooling device 955 may comprise a fan or other heat dissipating device." One skilled in the art would understand this sentence from its specification to mean that a fan is the active cooling component, and thus would understand "active cooling device" to mean a cooling device that is or includes a fan. As a result, the additional recitation in the Count of "the active cooling device comprises a fan" is redundant and thus not a further limitation.

The prosecution of related Pippin applications before the USPTO also supports and/or requires the interpretation of "active cooling device" as meaning an active cooling device that is or includes a fan. For example, the file history for Pippin's '482 application states, on various occasions, interchangeability of "fan"

[5] The background of the specification supporting the Prior Claim notes that active cooling devices are used to dissipate larger amounts of heat than passive cooling devices. Specification for U.S. Patent No. 6,975,047, column 1, lines 39-43.

and "active cooling device."[6] Consequently, one skilled in the art seeking to interpret "active cooling device" would understand from Pippin's statements to the USPTO that the phrase "active cooling device" is or includes a fan. Pippin would also be prevented by estoppel principles from arguing for something more than "active cooling device is or includes a fan."

Consequently, despite a difference in wording, the scope of element (g) is the same in both the Count and the Prior Claim.

(iii) FAILURE OF BOARD TO PERMIT CONSIDERATION OF DOUBLE PATENTING BASED ON MULTIPLE CLAIMS WAS ALSO LEGAL ERROR

On remand, if necessary, Thomas could also develop a record to support an alternative theory that Pippin's claim 34, and thus the Count, is unpatentable to Pippin due to same–invention type double patenting based on the combination of

[6] In the electronic file wrapper for Pippin's '482 application involved in these interferences, Pippin made statements defining an active cooling device to be equivalent or interchangeable with a fan, see e.g.:

> Page 5 of response filed 8/3/2009, states: "the active cooling device (a fan) being…"
> Page 6 of Declaration of expert filed 8/3/2009, states: "the active cooling device (a fan) being…"
> Page 10 of Response filed 11/20/2008, states: "Pippin is [sic] directed to subject matter of controlling the operation of a fan…" [discussing claim 45 of 08/636,024, which is the basis for claim 34 of Pippin's application (10/464,482) and the alleged basis for the Count by Pippin]
> Page 13 of Amendment filed 7/02/2004, states: "an active cooling device 955 (fan) …"
> Page 3 of Office Action mailed 4/5/2004, states: "active cooling device 955 (fan)…"

Pippin's prior issued claims 23 and 24 of U.S. Patent No. 6,975,047. In this alternative argument, if, on remand, the Board upon consideration of same-invention type double patenting were to find that claim 24 of U.S. Patent No. 6,975,047 was not the same invention as Pippin's claim 34, then Thomas would be able to further argue that Prior Claim 23 in conjunction with Prior Claim 24, both of U.S. Patent No. 6,975,047, together cover all that Pippin's claim 34 would attempt to patent. In other words, Prior Claims 23 and 24, both patented claims, when considered together, anticipate the Count. Consequently, no new subject matter would be patented by Pippin's claim 34 that is not already patented by Prior Claims 23 and 24. No case law exists, to our knowledge, that says multiple claims cannot be considered for double patenting.

(iv) BOARD'S RATIONALE FOR FAILING TO CONSIDER DOUBLE PATENTING WAS ALSO AN ABUSE OF DISCRETION

Even if the failure of the Board to permit consideration of double patenting was not legal error, the Board's decision is reviewable for abuse of discretion. *Abrutyn v. Giovanniello*, 15 F.3d 1048, 1050 (Fed. Cir. 1994). An abuse of discretion occurs if the decision (1) is clearly unreasonable, arbitrary, or fanciful; (2) is based on an erroneous conclusion of law; (3) rests on clearly erroneous fact findings; or (4) involves a record that contains no evidence on which the board could rationally base its decision. *Id*. at 1050 (citing *Heat & Control, Inc. v. Hester Indus., Inc.*, 785 F.2d 1017, 1022 (Fed. Cir. 1986)). As explained above,

the Board's conclusion as to same-invention type double patenting was unreasonable and based on erroneous conclusions of law. Hence, the Board's refusal to permit consideration of double patenting was also an abuse of discretion.

III. BOARD LACKED JURISDICTION TO DECLARE INTERFERENCES

Interferences can be declared by the Board in accordance with 35 U.S.C. § 135. In this case, the interferences were improperly declared because the Board lacked jurisdiction. Specifically, since Pippin's sole claim was barred by 35 U.S.C. § 101, Pippin lacked standing for an interference and the Board lacked jurisdiction under either 35 U.S.C. § 135(a) or 35 U.S.C. § 135(b).

(i) 35 U.S.C. § 101 BARS THE INTERFERENCES

The resolution of the motion for invalidity of Pippin's claim 34 for same-invention type double patenting is actually or effectively a threshold issue for declaring an interference. Pippin's '482 application has only this single claim. If such claim is statutorily barred by 35 U.S.C. § 101, then Pippin has no valid claim in its patent application. Consequently, Pippin's claim 34 – being barred by 35 U.S.C. § 101 – would necessarily also lead to a jurisdictional failure under 35 U.S.C. § 135.

Compliance with 35 U.S.C. § 101 for same-invention double patenting compliance is jurisdiction, that is, it is a threshold issue. Without its compliance, there is no ability to obtain a patent. Hence, same-invention type double patenting

compliance is essential to gaining a patent and thus should be treated as a threshold issue for declaring any interference. It is just as much a threshold issue as is 35 U.S.C. § 135(b) itself or written description. 37 C.F.R. § 41.201. Here, as noted above, since Pippin's sole claim is barred by 35 U.S.C. § 101, Pippin lacked standing for an interference.

(ii) 35 U.S.C. § 135(b) BARS THE INTERFERENCES

35 U.S.C. § 135(b) presents a threshold issue that should be addressed by the Board at the preliminary stage of an interference before proceeding to the merits. *Housey v. Berman*, 291 F.3d 1345, 1351 (Fed. Cir. 2002). "The absence of an interfering claim that is not barred under § 135(b) therefore renders an interference nonexistent, and thus deprives the Board of its authority to continue the proceeding." *Id.*

Here, Pippin's claim 34 was introduced into Pippin's corresponding application on May 24, 2010, after Pippin was unable to satisfy the examiner as to compliance with respect to the one year bar requirement of 35 U.S.C. § 135(b)(1) as to previously copied claims. Hence, Pippin's claim 34 was not made prior to one year from the date on which any of the involved Thomas patents were granted.[7]

[7] The most recent of the Thomas patents was issued August 26, 2008, and thus its critical date was August 26, 2009.

Cases have found that "a limited exception to this one year bar exists 'where the copier had already been claiming substantially the same invention as the patentee' during the critical time period." *Adair v. Carter*, 668 F.3d 1334, 1337 (citing *Corbett v. Chisholm*, 568 F.2d 759, 765 (CCPA 1977)). This limited exception, however, should not be available to a patent applicant in which its sole claim is barred by 35 U.S.C. § 101 because the alleged interfering subject matter has already been patented. While the policy discussed in *Corbett v. Chisholm* for the limited exception was that the belatedness of the interference was due to the fact that the USPTO never declared the interference when it could and due to the perceived benefit to the public in preventing a second patent on the same invention. *Corbett*, at 765. In this case, Pippin abandoned its earlier claim (claim 24 of Patent 6,975,047) for some nine (9) years before resurrecting the claim to satisfy 35 U.S.C. § 135(b)(1), in which time, Pippin already acquired a patent on the same invention. Hence, the policy reasons for the limited exception are not present in this case. Instead, the basic policy of 35 U.S.C. § 135(b), which was to impose a time limit on a patentee's exposure to an interference proceeding (*Corbett*, 568 F.2d at 765), should govern. Surely, allowing Pippin to abandon a claim for more than nine (9) years and then attempt to provoke an interference does not facilitate Thomas' being secure in their property right. Nor is it any advantage to the public to permit Pippin's interferences because Pippin already

acquired a patent and Thomas has various patents, particularly where priority is not disputed.

Given that Pippin's claim 34, its sole claim, was added to Pippin's '482 application to avoid rejections under 35 U.S.C. § 135(b) against claims that had been copied from Thomas' patents, the statutory bar under 35 U.S.C. § 101 of Pippin's claim 34 leaves Pippin with no ability to satisfy 35 U.S.C. § 135(b). Consequently, the Board lacked jurisdiction to declare the interferences.

The Board's refusal to allow Thomas to show that Pippin's sole claim was barred to Pippin by 35 U.S.C. § 101 and was an attempted circumvention of the time limit imposed by 35 U.S.C. § 135(b), was therefore legal error.

(iii) 35 U.S.C. § 135(a) BARS THE INTERFERENCES

The Board also had no jurisdiction to declare interferences under 35 U.S.C. § 135(a) because Pippin's sole claim was already patented, and the Board lacked jurisdiction to declare a patent verses patent interference.

The Board's jurisdiction for declaring and conducting interferences is found in 35 U.S.C. § 135(a), but such does not authorize declaration of patent versus patent interferences. Pippin's claim 34 was the sole claim of Pippin's corresponding application and it was already patented for the reasons noted above regarding same-invention type double patenting. Hence, Pippin's sole claim is not

only barred by 35 U.S.C. § 101 but is also an impermissible attempt to "game" the system to avoid the otherwise fatal proscriptions of 35 U.S.C. § 135(a).

The Board's refusal to allow Thomas to show that Pippin's sole claim was barred to Pippin barred 35 U.S.C. § 101 as being already patented, and as a result allowed Pippin an end run around the requirement that at least one party to an interference have a patent application.[8] One party should not be permitted to thwart the jurisdictional requirement of presence of at least one patent application for declaring an interference by simply filing a patent application for the same invention which that party has already patented. Consequently, since the Board declared the interferences and failed to adequately consider 35 U.S.C. § 101 and its jurisdictional defeating effect via 35 U.S.C. § 135(a), the Board committed legal error.

IV. BOARD'S JUDGMENTS CANCELING THOMAS' CLAIMS THAT WERE NOT PERMITTED TO BE DEFENDED WAS NOT ONLY UNFAIR TO THOMAS BUT ALSO LEGAL ERROR AND AN ABUSE OF DISCRETION

Thomas requests review of the Board's decisions which limited Thomas' ability to defend claims of its patents. The Board eventually rendered final judgments in Pippin's favor, and ordered all of Thomas' claims to be canceled. However, what is plainly unfair, unjust and unlawful is that Thomas was permitted

[8] Pippin did, however, have other available remedies, such as filing for reissue of its earlier granted patent and using same to provoke an interference or filing a civil action for interference under 35 U.S.C. § 291.

to only argue patentability of certain limited features of certain of its patented claims. As a result, Thomas was permitted to argue patentability as to some of its patented claims in a limited way; however, for numerous other claims, Thomas was not permitted to argue their patentability in any way. In this section, Thomas argues that the Board erred in ordering cancellation of Thomas' claims because Thomas was not permitted to reasonably defend its already patented claims.

A. WITH NO PRIORITY DISPUTE, THE INTERFERENCE PROCEEDINGS COULD HAVE BEEN TERMINATED

Thomas conceded priority early on in the interference proceedings. (JA 2143, 2152, 2160). Hence, the Board could have terminated the interferences but did not. In *In re Sullivan*, this court stated:

> The Board of Patent Appeals and Interferences shall determine questions of priority of the inventions and may determine questions of patentability. 35 U.S.C. § 135(a) (2000). Therefore, once priority is determined in an interference, the Board has discretion to terminate the interference without more.

In re Sullivan, 362 F.3d 1324, 1327 (Fed. Cir. 2004) (citing *Berman v. Housey*, 291 F.3d 1345, 1352 (Fed. Cir. 2002)).

For whatever reason, the Board elected to continue with the interference proceedings even though priority was not disputed.

B. SINCE BOARD UNWITTINGLY EXERCISED ITS DISCRETION TO DECIDE PATENTABILITY, BOARD HAD THE RESPONSIBILITY TO CONSIDER ALL CLAIMS

In *In re Beaver*, 893 F.2d 329 (Fed. Cir. 1989), this court reprimanded the Board for not examining all claims being appealed. Specifically, this court stated:

> The public responsibility of the Patent and Trademark Office requires attentive performance of all aspects of the patent examination function. The Office is charged with the duty of examining the claims contained in the patent application, including review by the Board when appeal is taken under 35 U.S.C. § 134. It is not only unfair to the applicant, it is also inefficient to decline to review claims that are properly appealed and reasonably argued before the Board.

Id. at 330.

This same public responsibility applies to interference proceedings in which a patent holder is unfairly told that the Board will only entertain patentability arguments with respect to a limited set of authorized features.

In this matter, the Board failed to satisfy it duty of public responsibility when it imposed arbitrary restrictions on Thomas' ability to defend the patentability of its already patented claims. More particularly, the APJ on behalf of the Board ordered Thomas to limit any motions to dedesignate claims to only those authorized features identified by the APJ. (See *infra* Statement of Facts, section IV(B).) The Board's decisions on Thomas' motion to dedesignate likewise considered only those authorized features. (A 5, 30, 31; JA 5, 30, 31). That is, for

those claims argued for dedesignation, the Board's decisions necessarily considered only the patentability of the authorized features in isolation, i.e., no consideration of the claims (which have various other limitations) as a whole, and no consideration for claims not having any authorized features. Furthermore, the Board awarded judgment to Pippin and instructed cancellation of all of Thomas' claims even those which were prevented from being argued. It is neither fair nor publicly responsible for the Board to hinder a patentee in this manner all under the guise of managing the number of issues that must be resolved by the Board.

C. BOARD'S ORDERS SEVERELY HINDERED THOMAS' MOTIONS TO DEDESIGNATE CLAIMS

The Board's orders concerning motions to designate claims as not corresponding to the count effectively prevented adequate consideration of the claims at issue.[9] Specifically, the APJ efforts to presumably streamline the interferences unfairly forced Thomas to defend only a limited subset of its patented claims by way of only a restricted set of authorized features.

Of the initially identified one-hundred and thirteen (113) features in the Thomas List which are across all seven (7) of Thomas' patents, the APJ only initially approved a total of thirty (30) features (though five (5) additional features

[9] Motions to designate claims as not corresponding to the count are also referred to as motions to designate claims.

were subsequently approved). However, each interference had its own set of authorized features, as noted in the following Table I.

TABLE I

Interference Proceeding No.	**Authorized Features**	**Additional Authorized Features**
105,801	1, 6, 17, 31, 39, 40 and 97	None
105,802	1, 6, 7, 9, 11, 12, 14, 15, 17, 18, 19, 21, 24, 86, 93 and 98	46, 62, 63, 67, 69
105,803	1, 5, 14, 15, 28, 49, 85, 103, 105, 106, 107 and 109	None[10]

The patent laws, fairness and due process all requires more than simply allowing a patent owner to defend his patents with one hand tied behind his back. The APJ's orders specifically stated Thomas could file a motion to designate claims as not corresponding to the count but only on the substantially restricted set of authorized features per interference. (See *infra* Statement of Facts, section IV(B).)

A claim represents a specific combination of features. In order to consider the patentability of a claim, all of its features as so combined in the claim must be considered if one is to properly evaluate patentability. 35 U.S.C. § 103(a). The APJ's order limiting the dedesignation motion to only limited features prevented any argument whatsoever on many claims and also prevented "as a whole" consideration for a substantial number of those claims that could even be argued.

[10] Although no additional features for Interference Proceeding No. 105,803 were approved, Thomas requested but was denied additional features 46 and 51.

Admittedly, dealing with claims from seven patents requires a substantial amount of USPTO resources to resolve. However, preventing or hindering the patentee from defending his patents is wrong and is not a fair way to manage resources. If any party should be penalized by the proceedings of these interferences, it should be Pippin who delayed the interferences and then only achieve the interferences after overwhelming the patent examiner with numerous self-serving declarations. Even worse, here, where priority of invention is not an issue, using an interference proceeding for a patentability challenge is not only not the proper forum but also unfairly, and perhaps unlawfully, places procedural burdens on patentees.

D. BOARD'S ORDERS IMPOSED UNFAIR & UNLAWFUL RESTRICTIONS ON THOMAS' ABILITY TO DEFEND ITS PATENTED CLAIMS

The detrimental impact of the Board's ordered use of only the limited set of "authorized" features is examined below for each of the interferences, which have been consolidated for purposed of appeal.

(i) INTERFERENCE PROCEEDING 105,801

For Interference Proceeding 105,801, the initial list of features produced during the interferences by Thomas, so called Thomas List, served to identify numerous limitations of the various claims that could be used to distinguish Thomas' claims from the Count. The APJ authorized use of only seven (7) such features. Order Authorizing Motions, Int. No. 105,801, paper 31, 6/16/2011, page 7. (JA 2148). Table II below shows that due to the APJ's limits on authorized

features, only a limited number of claims could, at best, be argued as patentably distinct from the Count but only based on the discrete authorized features. Specifically, the Board prevented Thomas from making any argument as to twenty-two (22) claims in Thomas' '011 patent.[11] Also, of the ten (10) claims that did contain an authorized feature, four (4) of such claims included at least one non-authorized feature that was not permitted to be argued. As to these claims, the Board also prevented Thomas from making arguments as to additional features of claims that did include an authorized feature.

TABLE II

Interference 105,801	**Claims With At Least One Authorized Feature**	**Claims With At Least One Non-Authorized Feature**	**Claims Having No Authorized Features**
'011 patent (claims 1-32)	1, 8, 9, 12, 17, 18, 20, 21, 29 and 31	2, 7, 9-12, 14-17, 19, 22-25, 27-29 and 32	2-7, 10, 11, 13-16, 19, 22-28, 30 and 32

At a minimum, Thomas' patented claims having no features authorized (i.e., claims 2-7, 10, 11, 13-16, 19, 22-28, 30 and 32) were not given any substantive consideration by the Board and thus cannot be fairly judged to be unpatentable over the Count. Yet that is exactly what the Board's judgment did by ordering cancellation of all of the claims of Thomas '011 patent. Further, as to claims 9, 12,

[11] Hence, 22 of 32 claims (or 68.8%) were permitted no argument whatsoever.

17 and 29, the Board excluded argument of other features and thus these claims were not given adequate substantive consideration by the Board.

(ii) INTERFERENCE PROCEEDING 105,802

For Interference Proceeding 105,802, the Thomas List again served to identify numerous limitations of the various claims that could be used to distinguish Thomas' claims from the Count. The APJ authorized use of only twenty-one (21) such features. (Order Authorizing Motions, paper 25, 6/16/2011). (JA 2156). Table III below shows that due to the APJ's limits on authorized features, only a limited number of claims could, at best, be argued as patentably distinct from the Count but only based on the discrete authorized features. Specifically, the Board prevented Thomas from making any argument as to twenty-nine (29) claims in Thomas' '557 patent, thirty-seven (37) claims in Thomas' '235 patent, and thirty-one (31) claims in Thomas' '668 patent.[12] Also, four (4) of the eighteen (18) claims of the '557 patent, six (6) claims of the seventeen (17) claims of the '235 patent and six (6) of the twenty-one (21) claims of the '668 patent that did contain an authorized feature also included at least one non-authorized feature that was not permitted to be argued. As to these claims, the

[12] Hence, 29 of 47 claims (or 61.7%) in the '557 patent, 38 of 54 claims (or 70.4%) in the '235 patent, and 31 of 52 claims (or 59.6%) in the '668 patent were permitted no argument.

Board also prevented Thomas from making arguments as to additional features of claims that did include an authorized feature.

TABLE III

Interference 105,802	**Claims With At Least One Authorized Feature**	**Claims With At Least One Non-Authorized Feature**	**Claims Having No Authorized Features**
'557 patent (claims 1-47)	1-3, 8, 11, 14, 15, 17, 18, 20, 23-25, 29, 33, 37, 40 and 41	4-7, 9, 12, 13, 21, 24-28, 30-33, 35, 36-39 and 43-47	4-7, 9, 10, 12, 13, 16, 19, 21, 22, 26-28, 30-32, 34-36, 38, 39 and 42-47
'235 patent (claims 1-54)	1, 4, 7, 22-25, 27, 30, 31, 38, 41, 42, 46, 48, 51 and 53	1-3, 5, 6, 8, 11, 13-23, 25-29, 32-34, 36-39, 43, 44 and 54	2, 3, 5, 6, 8-21, 26, 28, 29, 32-37, 39, 40, 43-45, 47, 49, 50, 52 and 54
'668 patent (claims 1-52)	1, 5, 7, 12, 14, 18, 19, 24-28, 30-32, 38, 39, 42-45 and 49	1, 2, 5, 6, 8, 10, 11, 13, 14, 16, 20-24, 29, 33-37, 40 and 45-52	2-4, 6, 8-11, 13, 15-17, 20-23, 29, 33-37, 40, 41, 46-48 and 50-52

At a minimum, the claims having no features authorized (i.e., claims 4-7, 9, 10, 12, 13, 16, 19, 21, 22, 26-28, 30-32, 34-36, 38, 39 and 42-47 of the '557 patent; claims 2, 3, 5, 6, 8-21, 26, 28, 29, 32-37, 39, 40, 43-45, 47, 49, 50, 52 and 54 of the '235 patent, and claims 2-4, 6, 8-11, 13, 15-17, 20-23, 29, 33-37, 40, 41, 46-48 and 50-52 of the '668 patent) were not given any substantive consideration by the Board and thus cannot be fairly judged to be unpatentable over the Count. Yet that is exactly what the Board's judgment did by ordering cancellation of all of the claims of Thomas '557 patent, '235 patent and '668 patent. Further, as to (a) claims 24, 25, 33 and 37 of '557 patent; (b) claims 1, 22, 23, 25, 27 and 38 of '235;

and (c) claims 1, 5, 14, 24 and 45 of patent '668, the Board excluded argument of other features and thus these claims were also not given adequate substantive consideration by the Board.

(iii) INTERFERENCE PROCEEDING 105,803

For Interference Proceeding 105,803, the Thomas List again served to identify numerous limitations of the various claims that could be used to distinguish Thomas' claims from the Count. The APJ authorized used only twelve (12) such features. (Order Authorizing Motions, paper 23, 6/16/2011, page 6.) (JA 2164). Table IV below shows that due to the APJ's limits on authorized features, only a limited number of claims could, at best, be argued as patentably distinct from the Count but even then only based on the discrete authorized features. Specifically, the Board prevented Thomas from making any argument as to twelve (12) claims in Thomas' '993 patent, two (2) claims in Thomas' '186 patent, and nineteen (19) claims in Thomas' '611 patent.[13] Also, three (3) of the seventeen (17) claims of the '993 patent, four (4) claims of fifteen (15) the '186 patent and two (2) of the twelve (12) claims of the '611 patent that did contain an authorized feature also included at least one non-authorized feature that was not permitted to be argued. As to these claims, the Board also prevented Thomas from

[13] Hence, 12 of 29 claims (or 41.4%) in the '993 patent, 2 of 17 claims (or 11.8%) in the '186 patent, and 19 of 31 claims (or 62.3%) in the '611 patent were permitted no argument.

making arguments as to additional features of claims that did include an authorized feature.

TABLE IV

Interference 105,803	**Claims With At Least One Authorized Feature**	**Claims With At Least One Non-Authorized Feature**	**Claims Having No Authorized Features**
'993 patent (claims 1-29)	1, 2, 6-10, 14-16, 18, 20, 22-25 and 29	5, 9, 11-13, 16, 17, 19, 21 and 26-29	3-5, 11-13, 17, 19, 21 and 26-28
'186 patent (claims 1-17)	1, 3-9 and 11-17	1, 5, 9 and 13	2 and 10
'611 patent (claims 1-31)	1, 4, 8, 12, 14, 15, 17, 19, 23, 24, 28 and 29	2, 3, 5, 7, 9, 11, 13, 15-18, 20-22 and 30	2, 3, 5-7, 9-11, 13, 16, 18, 20-22, 25-27 and 30-31

At a minimum, the claims having no features authorized (i.e., claims 3-5, 11-13, 17, 19, 21, 26-28 of the '993 patent; claims 2 and 10 of the '186 patent, and claims 2, 3, 5-7, 9-11, 13, 16, 18, 20-22, 25-27, 30-31 of the '611 patent) were not given any substantive consideration by the Board and thus cannot be fairly judged to be unpatentable over the Count. Yet that is exactly what the Board's judgment did by ordering cancellation of all of the claims of the '993 patent, '186 patent and '611 patent. Further, as to (a) claims 9, 16 and 29 of '993 patent; (b) claims 1, 5, 9 and 13 of '186; and (c) claims 15 and 17 of patent '611, the Board excluded argument of other features and thus these claims were not given adequate substantive consideration at the Board.

E. BOARD ABUSED ITS DISCRETION AND COMMITTED LEGAL ERRORS IN NOT PERMITTING CONSIDERATION OF ALL THOMAS' CLAIMS

As depicted in Tables II, III and IV above, the effect of the Board's orders that permitted use of only limited authorized features in Thomas' motions to dedesignate claims was unfairly detrimental to Thomas. As explained above, each of the seven (7) patents in the three interference proceedings have several, if not numerous, claims that Thomas was not permitted to defend. If the Board desires to limit the amount of work they need to perform, decency requires that they rule only as to those of the patent claims for which review by the Board was permitted.

(i) BOARD ABUSED ITS DISCRETION IN CANCELING CLAIMS NOT CONSIDERED

The Board, as detailed above, prevented Thomas from defending many of its claims, yet the Board's final judgments ordered such claims canceled from Thomas' patents.

Specifically, as discussed above, the Board limited Thomas' ability to argue de-designation from the Count based on only limited isolated features authorized by the Board. The non-considered claims were substantial. In Tables II, III and IV above, the column entitled "Claims Having No Authorized Features" identifies each claim of the Thomas' patents that were not able to be defended in any way, that is, non-considered claims. The Board made no findings on whether non-considered claims were somehow similar or duplicative of considered claims;

instead, the Board simply imposed an arbitrary means of reducing the size of the proceedings.[14]

The effect of the limitations imposed by the Board was to presume that these non-considered claims were presumptively not patentable over the Count. 37 C.F.R. § 41.207(b). The Board thus prevented Thomas from defending many of its claims, and then by the Board's final judgments ordered all such claims canceled from Thomas' patents. This, however, was an abuse of discretion.

Even if the Board is permitted to hinder a patentee's ability to defend his patents, the Board's decision is reviewable for abuse of discretion. *Abrutyn v. Giovanniello*, 15 F.3d 1048, 1050 (Fed. Cir. 1994). An abuse of discretion occurs if the decision (1) is clearly unreasonable, arbitrary, or fanciful; (2) is based on an erroneous conclusion of law; (3) rests on clearly erroneous fact findings; or (4) involves a record that contains no evidence on which the board could rationally base its decision. *Id.* at 1050 (citing *Heat & Control, Inc. v. Hester Indus., Inc.*, 785 F.2d 1017, 1022 (Fed. Cir. 1986)).

[14] In denying a request for additional features, the Board's improper rationale is evident. In particular, the Board stated: "Because counsel for Thomas was unable to show that any of its independent claims was without a feature that was already identified in the telephone conference call held June 15, 2001, as a basis for designating a claim as not corresponding to the count, the request to add more distinguishing features in the basis for designating claims as corresponding to the count was denied." Interference No. 105,803, paper 25, 7/14/2012, pages 1-2. (JA 2397-2398).

Given the Board-applied presumption that any claims not dedesignated from corresponding to the Count are considered not patentably distinct from the Count (Rule 37 C.F.R. § 41.207(b)) the ability of a patentee to defend its various different claims is paramount. It is not rationale for the Board to presume patented claims are not patentably distinct from the Count and then prevent patentee from arguing their patentability. Not only is this irrational, but it is also legally erroneous because "each claim is a separate statement of the patented invention." *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1220 (Fed. Cir. 1995). The Board's actions prejudiced Thomas' ability to defend its patents and were an abuse of discretion.

The Board's decisions were an erroneous conclusion that was not only irrational and arbitrary but also legal error. Hence, even if the deferential abuse of discretion test is applied, the Board's order is not rational and contaminated the interference proceedings. Accordingly, the Board's decisions must be vacated or reversed.

(ii) BOARD COMMITTED LEGAL ERROR IN CANCELING CLAIMS NOT CONSIDERED

Thomas' motion to dedesignate claims as not corresponding to the Count involved a patentabilty examination of Thomas' patented claims and Pippin's claim 34, which is the Count. The Board correctly understood that the issue presented in a motion to dedesignate claims is one of patentability, namely,

obviousness. Indeed, in the Board's decisions on the motions, the Board stated "[t]he proper analysis is one of obviousness per *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966)." E.g., Interference No. 105,801, paper 76, 9/19/2012, page 9. (A 12, 37, 67; JA 12, 37, 67).

As explained above, each of the seven (7) patents in the three interference proceedings have many claims that Thomas was not permitted to offer any patentability arguments. In Tables II, III and IV above, the column entitled "Claims Having No Authorized Features" identifies claims of each of Thomas' involved patents that were not able to be defended in any way. Notwithstanding, the Board presumed that these claims "correspond" to the Count and were therefore obvious in view of the Count. Accordingly, the Board's judgments instructed cancellation of these claims.

The Board's decisions are based on an erroneous conclusion of law. A fundamental tenet of patent law is that each claim stands on its own. In other words, "each claim is a separate statement of the patented invention." *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1220 (Fed. Cir. 1995). The Board violated this tenant when it authorized cancellation of certain claims in the Thomas patents without permitting Thomas to defend such claims. This is legal error and consequently the Board's decisions and judgments as to at least such claims must be reversed.

(iii) BOARD VIOLATED DUE PROCESS IN CANCELING CLAIMS NOT CONSIDERED

A party's due process rights are not violated as long as the party has had "a meaningful opportunity to present [its] case." *In re Shinnecock Smoke Shop*, 571 F.3d 1171, 1174 (Fed. Cir. 2009) (quoting *Goldberg v. Kelly*, 397 U.S. 254, 268-69 (1970)). However, in these interferences, as to the claims that were given no consideration, Thomas was given no opportunity to present a defense. The Board's cancellation of certain claims in the Thomas patents without permitting Thomas to defend such claims, was a denial of due process; hence, the Board's judgments as to at least such claims must be reversed.

F. BOARD COMMITTED LEGAL ERRORS IN CANCELING THOMAS' CLAIMS THAT WERE NOT CONSIDERED AS A WHOLE

A claim represents a specific combination of features. In order to consider the patentability of a claim, all of its features as so combined in the claim must be considered if one is to properly evaluate patentability. In other words, claims must be considered as a whole. Indeed, this requirement is statutory, as 35 U.S.C. § 103(a) states:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter **as a whole** would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

> matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

35 U.S.C. § 103(a)(emphasis added).

An obviousness analysis must "start with the claimed invention *as a whole*." *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1448 (Fed. Cir. 1984). The Supreme Court has also stated the need to consider the invention as a whole when determining patentability, underlining the "need to consider the invention as a whole, rather than "dissect[ing] the claims into old and new elements and then ... ignor[ing] the presence of the old elements in the analysis." *Bilski v. Kappos*, 130 S. Ct. 3218 (2010) (citing *Diamond v. Diehr*, 450 U.S. 175, 188 (1981)). Also, this court has similarly noted that distilling an invention down to the "gist" or "thrust" of an invention disregards the requirement of analyzing the subject matter "as a whole." *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1548 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

The Board in deciding Thomas' motion to dedesignate certain claims applied a patentability type analysis. (A 12, 37, 67; JA 12, 37, 67). However, the specific patentability analysis performed was erroneous because the Board ordered consideration of only "isolated" features that had been "approved" and did not fully and properly consider Thomas' patented claims as a whole.

Admittedly, dealing with claims from seven patents requires a substantial amount of USPTO resources to resolve. However, preventing or hindering the

patentee from defending his patents is wrong and not a fair or just way to resolve complex patentability challenges. If any party should be penalized by resource burdens caused by these interference proceedings, it should be Pippin whose dilatory actions in seeking the interferences lead to inclusion of so many of the Thomas patents that had been issued for some time. Nor should the Board's burdens be detrimental to Thomas patents since the Board's consideration of these patentability issues was at their discretion.

As previously discussed, the Board limited the scope of Thomas' dedesignation motion to only limited features of Thomas' claims. Consequently, the Board's actions operated to completely suppress "as a whole" consideration for all of Thomas' claims.

When considering claims as a whole, it is not appropriate to restrict consideration to only isolated features of the claims. Appropriately, in discussing claim construction, this court has stated: "A court should nonetheless be mindful of the fact that a '[p]roper claim construction, however, demands interpretation of the entire claim in context, not a single element in isolation.'" *Hockerson-Halberstadt, Inc. v. Converse, Inc.*, 183 F.3d 1369, 1374 (Fed. Cir.1999). Thus, the feature-based approach followed by the Board was fatally flawed. While the Board might have used the features, and the discrete novelty of such features, as a means to evaluate an initial factor of patentability, the Board did not follow that

path. Instead, the Board evaluated limited discrete features and then jumped to the conclusion that all claims should be canceled merely since the evaluated discrete features were deemed not shown to be patentable over the Count when combined with additional prior art. Thomas submits, however, that the Board's use of isolated features of claims is inconsistent with "as a whole" patentability analysis. Consequently, Thomas submits that the Board's decisions and judgments resulting from the Thomas' dedesignation motion must be reversed or vacated.

Even if Thomas were somehow bound to the initial list of features (so called Thomas List), the Board's analysis relative to the Thomas List was also erroneous.

First, the Board's action in permitting only use of limited authorized features prevented arguments for features of many claims. In Tables II, III and IV above, the column entitled "Claims With At Least One Non-Authorized Feature" identifies claims of each of Thomas' involved patents that include a feature identified in the Thomas List that was not authorized for usage before the Board. At a minimum, the analysis of these identified claims was not considered as a whole relative to features listed in the Thomas List. That is, since Thomas List way abruptly and sharply curtailed by the Board, Thomas was not permitted to argue one or more identified features of these claims which were identified in Thomas List. This was legal error by the Board because at least these claims were

prevented from being considered as a whole relative to features listed in Thomas List.

Second, the intersection of the claims in the "Claims With At Least One Authorized Feature" column and the claims in the "Claims With At Least One Non-Authorized Feature" column provided in Tables II, III and IV are claims that necessarily could have been considered but not as a whole relative to features listed in Thomas List. These claims, which are presented in Table V, were only partially authorized for consideration and thus were necessarily unable to be considered as a whole relative to features listed in Thomas List. That is, since Thomas List was abruptly and sharply curtailed by the Board, Thomas were not permitted to argue the multiple identified features of these claims. This was legal error by the Board because these claims were prevented from being considered as a whole relative to features listed in Thomas List.

TABLE V

Interference 105,801	**Partially Authorized Claims**
'011 patent	9, 12, 17, 29
'557 patent	24, 25, 33, 37
'235 patent	1, 22, 23, 25, 27, 38
'668 patent	1, 5, 14, 24, 45
'993 patent	9, 16, 29
'186 patent	1, 5, 9, 13
'611 patent	15, 17

In Thomas' dedesignation motions, only certain of Thomas' patented claims were argued relative to the limited authorized features. Although these dedesignation motions were denied by the Board, it should be understood that the Board's decisions on said motions were in violation of law because Thomas was restrained by the Board's orders from having patentability of Thomas' involved claims considered as a whole.

G. BOARD COMMITTED LEGAL ERRORS IN APPLYING PRESUMPTION AGAINST PATENTEE IN PATENTABILITY DEFENSE

In these interference proceedings, Pippin is the senior party and Thomas is the junior party. Consequently, once the interferences were declared, which occurred in an *ex parte* manner, the senior party was given substantial procedural advantages. Generally speaking, the senior party is by default presumed the first inventor of the interfering subject matter (i.e., the count).

USPTO rules grant a senior party a presumption in which the senior party is presumed to be the first inventor of the interfering subject matter (i.e., the count). 37 C.F.R. § 41.207(a). There is also a presumption of claim correspondence under 37 C.F.R. § 41.207(b).[15] Together, these presumptions, provide the senior party with substantial procedural advantages. Specifically, it becomes the burden of the

[15] 37 C.F.R. § 41.207(b), states: "For the purposes of determining priority and derivation, all claims of a party corresponding to the count are presumed to stand or fall together. To challenge this presumption, a party must file a timely substantive motion to have a corresponding claim designated as not corresponding to the count."

junior party to rebut these presumptions. If the junior party has patents involved in the interference proceedings, failure to rebut the presumptions means a loss of the junior party's patents.

In the present interference proceedings, even though priority was conceded, the above noted presumptions were applied against Thomas, the junior party. As a result, the Thomas patents involved in the interference proceedings were disrespected.

The principal issue decided by the Board for these interferences was whether the claims of the Thomas patents were proven by Thomas to be patently distinct from the Count so that such claims could be designated as not corresponding to the Count. Thus, Thomas was placed in a position of having to prove patentability of their own already patented claims. Indeed, in the Board's decisions on Thomas' motion to dedesignate claims, the board stated:

> Thomas as the moving party bears the burden of proof to establish entitlement to the relief requested. 37 C.F.R. § 41.121(b). A claim corresponds to a count if the subject matter of the count, treated as prior art to the claim, would have anticipated or rendered obvious the subject matter of the claim. 37 C.F.R. § 41.207(b)(2). Thus, unlike other situations, such as a civil action for patent infringement where the moving defendant asserts that the claimed subject matter is anticipated or obvious, Thomas as the moving party bears the burden of establishing a negative, i.e., that the subject matter of the claims is *not* anticipated or obvious in light of the count and any other applicable prior art.

E.g., Interference No. 105,801, Paper 76, 9/19/2012, page 8. (A 11, 37, 67; JA 11, 37, 67).

Thomas submits that the presumptions and resulting burden of proof placed on them as patentees by the Board, even in an interference proceeding, was an error in law. This error in law is reviewed without deference to the Board's decision. *Bruning v. Hirose*, 161 F.3d 681, 684 (1998).

(i) PRESUMPTION OF VALIDITY SHOULD PROTECT PATENTED CLAIMS EVEN IN AN INTERFERENCE

The patent act indicates that issued patents are "presumed valid." 35 U.S.C. § 282. This presumption was recently affirmed by the Supreme Court as requiring a clear and convincing standard for proving an invalidity defense. *Microsoft Corp. v. i4i L.P.*, 564 U.S. ___, 131 S. Ct. 2238, 2252-53 (2011).

Although the presumption of validity might not be applicable in certain proceedings before the USPTO, such as reexaminations or reissues, interferences are not procedures for examination or correction of patents before an examiner. Instead, interferences are about priority disputes. Regardless of the extent to which the presumption of validity applies during an interference proceeding, nothing in law or equity supports imposing a **presumption of invalidity** against a junior party's patents, especially in an interference where the junior party conceded priority.

The presumption of validity codified in 35 U.S.C. § 282 should apply or at the very least should prevent the burden of proof from being placed on the patentee to prove patentable distinctness. The reason a senior party gains substantial procedural benefit over the junior party in a typical interference proceeding is because they have an earlier filed date. That makes sense when there is a dispute over who invented first, which would be a priority dispute. Here, there is, however, no priority dispute. Consequently, this interference proceeding is simply a masked "patentability" proceeding. Even worse, when priority of invention is not an issue, using an interference proceeding for a patentability challenge unfairly and unlawfully places the burden on the patentee to prove patentability.

Accordingly, Thomas submits that, in an interference proceeding where priority is not disputed, a junior party's patents are entitled to at least some protection by the presumption of validity under 35 U.S.C. § 282. A senior party having priority, which seeks to challenge the validity of the junior party's patents, should always carry the burden of proof that the already patented claims of the junior party's patents are not patentable over the Count. More generally, a challenger of patentability should carry the burden to prove that the already patented claims are not patentable over the Count. Consequently, in this case, all of Thomas' patent claims should not have been presumptively grouped as corresponding to the Count. Instead, the burden to prove unpatentability should

have been placed on Pippin. Accordingly, the Board's application of the presumptions and burden of proof were erroneous and a violation of 35 U.S.C. § 282.

(ii) *BRUNING V. HIROSE* IS NOT ON POINT

Bruning v. Hirose, 161 F.3d 681 (1998) would appear to be the most relevant case. In *Bruning v. Hirose*, this court held that "during an interference involving a patent issued from an application that was copending with the interfering application, the appropriate standard of proof for validity challenges is the preponderance of the evidence standard." *Id.* at 686. Hence, *Bruning v. Hirose* only concludes that a preponderance of evidence standard, as opposed to the clear and convincing standard provided by the presumption of validity, is to be used in a validity challenge if the involved patents being challenged were copending with the interfering application.

However, unlike *Bruning v. Hirose*, the present interferences do not involve a validity challenge to the Thomas patents by a challenger. Moreover, the Board in the present interferences went beyond the evidentiary standard being "preponderance of evidence" with respect to patent validity. As noted above, the Board applied a presumption that Thomas' patented claims were presumptively invalid unless Thomas proved otherwise by carrying the burden of proof. Unlike the present interference proceedings, *Bruning v. Hirose* did not discuss or decide

anything concerning a presumption of invalidity or requiring a patentee to carry the burden of proof. Hence, *Bruning v. Hirose* is not applicable.

(iii) BOARD COMMITTED LEGAL ERROR IN PRESUMING PATENTED CLAIMS UNPATENTABLE

The Board committed legal error in making Thomas carry the burden to prove that Thomas' claims are "*not* anticipated or obvious in light of the count and any other applicable prior art." In interference proceedings, where the junior party concedes priority and has involved patents, the procedural rules 37 C.F.R. § 41.121(b) and 37 C.F.R. § 41.207(b)(2) cannot be used to disadvantage a patentee with respect to patentability. That is, the presumption of validity provided by 35 U.S.C. § 282 causes at least these rules to be inapplicable to a junior party that has conceded priority and has involved patents. The burden of proof must be placed on the challenger of the validity of the patents, and any presumption regarding validity in an interference proceeding must benefit the junior party, or at least not harm the junior party. Therefore, the Board's imposition of a presumption of invalidity and burden of proof on Thomas was legal error and should be reversed.

CONCLUSION

The Board made several errors in each of the interference proceedings to the detriment of Thomas. The Board's decisions and judgments should therefore be reversed and the Board's orders regarding its judgments should be vacated. The Board should also be instructed to (i) permit challenge to Pippin's claim 34 (and thus the Count) under same-invention type double patenting and correspondingly to the Board's jurisdiction as to these interferences; and (ii) vacate all decisions and judgments concerning patentability of claims of the Thomas patents.

Dated: April 9, 2013

Respectfully Submitted,

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ADDENDUM

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BoxInterferences@uspto.gov
571-272-4683

Paper 077
Filed: September 19, 2012

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

C. DOUGLASS **THOMAS** and ALAN E. THOMAS
Junior Party
(U.S. Pat. No. 5,752,011)[1]

v.

JACK D. **PIPPIN**
Senior Party
(Application 10/464,482)[2]

Patent Interference No. 105,801 (JL)
(Technology Center 2100)

Before JAMESON LEE, MICHAEL R. ZECHER, and JUSTIN T. ARBES, *Administrative Patent Judges*.

ARBES, *Administrative Patent Judge*.

Judgment – Merits – Bd. R. 127

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[1] U.S. Pat. No. 5,752,011 is based on patent application 08/262,754, filed June 20, 1994. Paper 1. The real party in interest is IpVenture, Inc. Paper 14.
[2] Filed June 19, 2003. Patent application 10/464,482 was accorded the benefit of patent application 08/124,980, filed September 21, 1993. Paper 1. The real party in interest is Intel Corp. Paper 6.

In a concurrent paper, Thomas's Motion 1 (Paper 36) seeking to designate claims 1-5, 8-24, and 29-32 of U.S. Pat. No. 5,752,011 as not corresponding to the count has been denied. There are no other pending motions in this interference. Thomas also indicated that as the junior party, it would not be filing a priority motion. Paper 31 at 2, 8. As such, Thomas concedes priority with respect to any claim left as corresponding to the count after consideration of Thomas's motion to designate claims as not corresponding to the count. *Id*. Accordingly, because Thomas's Motion 1 has been denied and all of Thomas's involved claims correspond to the count, it is now appropriate to enter judgment against junior party Thomas.

It is **ORDERED** that judgment with respect to Count 1 is entered against junior party C. DOUGLASS THOMAS and ALAN E. THOMAS.

It is **FURTHER ORDERED** that claims 1-32 of junior party's involved U.S. Pat. No. 5,752,011, which correspond to Count 1, are cancelled.

It is **FURTHER ORDERED** that the parties shall note the requirements of 35 U.S.C. § 135(c) and Bd. R. 205.

It is **FURTHER ORDERED** that a copy of this judgment shall be entered into the files of U.S. Pat. No. 5,752,011 and patent application 10/464,482.

Interference No. 105,801
Thomas v. Pippen

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

C. DOUGLASS **THOMAS** and ALAN E. THOMAS
Junior Party
(Patent No. 5,752,011)

v.

JACK D. **PIPPIN**
Senior Party
(Application 10/464,482)

Patent Interference No. 105,801
(Technology Center 2100)

Before JAMESON LEE, MICHAEL R. ZECHER, and JUSTIN T. ARBES, *Administrative Patent Judges*.

ARBES, *Administrative Patent Judge*.

Decision – Motions – Bd. R. 125(a)

This interference was declared on April 11, 2011. The sole pending motion is Thomas's Motion 1, which seeks to designate claims 1-5, 8-24, and 29-32 of Thomas's involved Patent 5,752,011 ("Thomas '011") as not corresponding to the count. Pippin opposes Thomas's Motion 1. Because Thomas fails to demonstrate by a preponderance of the evidence that claims 1-5, 8-24, and 29-32 of Thomas

'011 should be designated as not corresponding to the count, Thomas's Motion 1 is *denied*.

PROCEDURAL HISTORY

The parties' initial requests for authorization to file various motions were resolved in an Order dated June 16, 2011. Paper 31. Thomas requested authorization to file a motion to designate its involved claims as not corresponding to the count, citing 113 allegedly distinguishing features of its involved claims. Paper 26. Thomas was ordered to limit its list to a reasonable number of limitations and authorized to file a motion to designate its involved claims as not corresponding to the count only on the basis of numbered features 1, 6, 17, 31, 39, 40, and 97 in Thomas's list. Paper 31 at 7. The Order specifically noted that the motion "must account for not just the count as prior art, or just the prior art references of record in either party's involved cases, but also any prior art otherwise known to party Thomas as well as the level of ordinary skill in the art." Paper 31 at 7-8. The Order also required Thomas to set forth the closest prior art feature known to Thomas and the closest known feature within the level of ordinary skill in the art, giving specific examples of what should be provided for features 1 and 6. Paper 31 at 8.

In addition, Thomas was authorized to file: (1) a motion alleging unpatentability of Pippin's claim 34 under 35 U.S.C. § 112, first paragraph, as lacking enabling disclosure; and (2) a motion alleging unpatentability of Pippin's claim 34 under 35 U.S.C. § 103 as obvious over two prior art references. Paper 31 at 3-6. All other requests for motions by the parties were either

dismissed or denied. Paper 31 at 2-8. Thomas subsequently stated that it would not be filing the two motions regarding unpatentability and would only be filing a motion to designate its involved claims as not corresponding to the count. Paper 34. Thomas also indicated that as the junior party, it would not be filing a preliminary statement or priority motion. Paper 31 at 2, 8. Thus, Thomas's Motion 1 is the only pending motion in this interference.

FINDINGS OF FACT

The following findings of fact are supported by a preponderance of evidence.

1. Junior party Thomas is involved in this interference on the basis of Patent 5,752,011.
2. Senior party Pippin is involved in this interference on the basis of Application 10/464,482, filed June 19, 2003.
3. Thomas's real party in interest is IpVenture, Inc. Paper 14.
4. Pippin's real party in interest is Intel Corporation. Paper 4.
5. The sole count in this interference is Count 1, which is defined as (Paper 23):

Claim 34 of Pippin's Application 10/464,482

6. Claim 34 of Pippin's Application 10/464,482 reads as follows:

34. A computer system comprising:
an active cooling device;
a microprocessor comprising:
a register storing a register value corresponding to a

threshold temperature;

a programmable thermal sensor receiving the register value, wherein the programmable thermal sensor generates a first interrupt signal if a microprocessor temperature exceeds the threshold temperature,

wherein the active cooling device is activated in response to the interrupt signal, and

wherein the active cooling device comprises a fan; and

clock circuitry for providing a clock signal for the microprocessor,

wherein a frequency of the clock signal is reduced in response to the first interrupt signal.

Thomas '011

7. Thomas '011 discloses that "[t]he second embodiment is particularly advantageous for portable computing devices because it conserves battery life by using a sleep clock when no processing is needed." Col. 5, ll. 40-42.

Sheets (Patent 4,670,837)

8. Sheets discloses determining the current rate of required microprocessor activity and varying the clock frequency of the microprocessor based on that rate. Abstract; col. 1, ll. 45-54; col. 3, ll. 18-21.

9. As described in Sheets, the "present invention is directed to reducing the amount of energy drawn by system 100 from . . . a [Direct Current] DC source," such as a battery. Col. 2, ll. 37-43.

10. Sheets discloses: "[Voltage-controlled oscillator] (VCO) 102 gradually adjusts the frequency of the clock signal transmitted to microprocessor 101 to the computed frequency in response to the digital word. Reducing the clock frequency reduces the power consumed by microprocessor 101 and, by reducing the required access rate to the associated devices, i.e., ROM 107, RAM 108, and I/O port 109, also reduces the power consumed by those devices. The power reduction is substantially directly proportional to the reduction of the clock frequency. For example, a frequency reduction from 20 megahertz to 10 megahertz will result in a saving of approximately 50%." Col. 2, l. 65-col. 3, l. 8.

Georgiou (Patent 5,189,314)

11. Georgiou discloses detecting processor activity and varying the clock frequency of the processor based on that activity. Abstract; col. 2, ll. 10-20, 40-41.

12. As described in Georgiou, "[i]n accordance with this invention, heat production is controlled in accordance with needs through changes in clock rate (i.e., by slowing down the clock rate when a circuit is idling), in order to make it possible to speed up the clock rate when performing either special critical work or useful work in general." Col. 2, ll. 10-16.

13. Georgiou discloses that "[w]hen a circuit is switched to a lower clock rate, there is a heat generation savings. Given a certain heat dissipation capacity (based on the characteristics of the chip and package), it is possible to switch the clock to a higher rate, if enough heat savings have been

accumulated." Col. 2, ll. 20-25; col. 3, ll. 33-38.

14. Georgiou discloses "us[ing] a clocking rate for a chip which is higher than the maximum clocking rate specified for the chip." Col. 2, ll. 1-3. According to Georgiou, "[t]he performance of the chip is improved by changing the clock to a higher rate than normally allowed." Col. 2, ll. 29-30.

15. When useful work is being done and the value of the up-down heat counter is high enough, Georgiou discloses that it becomes beneficial to operate the chip at a higher clock rate in order to improve speed performance. Col. 3, ll. 33-38.

Swamy (Patent 5,623,594)

16. Swamy discloses an "overtemperature detection circuit" that takes "periodic readings" of a processor's operating temperature to determine whether the temperature exceeds a "predetermined maximum allowed temperature." Col. 7, ll. 10-28; col. 2, ll. 30-40.

17. Swamy discloses sending a signal to various components to attempt to cool the processor if the predetermined temperature is exceeded. "For example, the signal may instruct the fan 240 to turn on or increase speed if already on. Alternatively, the signal may send a message to the user through the video subsystem 280, or it may instruct the [Central Processing Unit] CPU clock 250 to decrease the operational speed of the CPU 260. As a last resort, the signal may instruct the CPU 260 to save the document presently being worked on to the disk 320 and turn the power to the [Personal

Computer] PC off." Col. 7, ll. 34-41; col. 2, ll. 40-51.

18. Swamy discloses that "[t]he component to which the signal is sent may depend on how extreme the temperature of the CPU 260 has become and how long the temperature has been at the excessive level." Col. 7, ll. 30-33.

19. Swamy discloses that the signals sent in an attempt to cool the processor "can be programed to occur in several different combinations." Col. 6, l. 64-col. 7, l. 1.

Neal (Patent 5,483,102)

20. Neal discloses the thermal management of a semiconductor device and, in particular, reducing an internal clock frequency of the semiconductor device upon receiving a first signal indicating fan failure and/or a second signal indicating thermal overload. Col. 1, ll. 9-14.

21. Neal discloses that fans for cooling semiconductor devices commonly employ a chip set to generate a motor pulse at a given frequency to drive a fan motor. Col. 5, ll. 31-33. By altering the frequency of the motor pulse, Neal discloses that the fan is driven at various speeds, thereby increasing or decreasing the fan's airflow production. Col. 5, ll. 33-36.

Dinh (Patent 5,526,289)

22. Dinh discloses a fan cooling subsystem for a personal computer wherein the speed of the fan is adjustable based on the temperature within the housing of the personal computer. Col. 1, ll. 10-13.

23. Dinh discloses that it may be desirable to have two speeds for a fan: (1) when the computer's elements are operating at a low temperature, the fan blows quietly at a low speed; and (2) when the computer's elements are hot, the fan blows rapidly and loudly at a high speed. Col. 1, ll. 29-35.

24. Dinh discloses that "there is a need for a fan subsystem which can increase the fan speed proportionally to the increase in the temperature of the computer's elements. Such a fan subsystem would evenly match the temperature inside the computer with the fan speed necessary to cool the system. Thus, a computer system with such a fan subsystem would provide the most efficient trade off between fan speed and sound quality." Col. 1, ll. 44-51.

ANALYSIS

Thomas's Motion 1 seeks to designate claims 1-5, 8-24, and 29-32 of Thomas '011 as not corresponding to the count. Thomas as the moving party bears the burden of proof to establish entitlement to the relief requested. 37 C.F.R. § 41.121(b). A claim corresponds to a count if the subject matter of the count, treated as prior art to the claim, would have anticipated or rendered obvious the subject matter of the claim. 37 C.F.R. § 41.207(b)(2). Thus, unlike other situations, such as a civil action for patent infringement where the moving defendant asserts that the claimed subject matter is anticipated or obvious, Thomas as the moving party bears the burden of establishing a negative, i.e., that the subject matter of the claims is *not* anticipated or obvious in light of the count and any other applicable prior art.

It is evident that the count, if treated as prior art, would not have anticipated any of the claims which Thomas seeks to designate as not corresponding to the count. Thus, the proper analysis is one of obviousness per *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966). The pertinent factual inquiries are: (1) the scope and content of the prior art, (2) the differences between the claimed invention and the prior art, (3) the level of ordinary skill in the art, and (4) any objective evidence of nonobviousness. *Id*. at 17. The obviousness conclusion is reached from the perspective of the hypothetical person having ordinary skill in the art who is presumed to be aware of all pertinent prior art. *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 454 (Fed. Cir. 1985). Also, a person of ordinary skill in the art has ordinary creativity and is not an automaton. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). If a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Id*. at 417.

To prevail in its motion, Thomas must demonstrate by a preponderance of the evidence that each of the claims it seeks to designate as not corresponding to the count would not have been obvious to one of ordinary skill in the art, given the subject matter of the count as prior art and any other applicable prior art. Thomas in its motion identifies a number of features in its claims that allegedly distinguish the count and other prior art, and groups the involved claims accordingly. We address each group of claims in turn.

For all of the reasons discussed below, Thomas has not satisfied its burden

of proof that the collective differences between each claim it seeks to designate as not corresponding to the count and the subject matter of the count are such that the claim would not have been obvious over the count and other applicable prior art.

Features 6 and 38 – Varying Clock Frequency Based on Processor Activity and Temperature

Thomas argues that claims 1-5, 8-24, and 29-32 of Thomas '011 recite the feature of varying clock frequency based on both processor activity and temperature (features 6 and 38). For example, claim 8 of Thomas '011 recites a temperature sensor, activity detector, and clock unit where the clock unit produces a "clock having a frequency that varies in accordance with both the activity and the chip temperature of the microprocessor." Thomas contends that the involved claims would not have been obvious over the count and other prior art based on this feature.

The count discloses varying clock frequency based on temperature, not processor activity. Thomas, however, admits in the background section of its involved patent that clock frequency variation based on processor activity was known at the time. *See, e.g.*, Thomas '011, col. 1, ll. 15-24 ("It is also known to suspend or slow a computer's processor (e.g., microprocessor, CPU) when the processor is not actively processing. . . . [In one exemplary reference,] the sleep mode either stops the clock or slows it to 4 MHz."); Paper 47 at 14 (admitted facts 63-64). Thus, clock frequency variation based on processor activity and based on temperature were both old and well known individually in the prior art.

The issue before us is whether the claims reciting the combined feature of varying clock frequency based on processor activity *and* temperature would have been obvious to one of ordinary skill in the art given the count itself and any other applicable prior art.

Thomas points to testimony from its expert, Dr. Douglas P. McNutt, identifying Nakagawa (Japanese Patent Application 1990-83720, Exhibit 2010) as "the closest prior art with respect to the feature of frequency reduction," and Kenny (Patent 5,287,292) as "the closest prior art known with respect to the feature of activity monitoring." Paper 36 at 13-15. We disagree that Nakagawa and Kenny are the closest prior art references for purposes of feature 6/38. Indeed, Thomas admits that "[t]here is no activity detector in Nakagawa." Paper 36 at 13. Nakagawa therefore cannot be the closest prior art for claims including the feature of varying clock frequency based on processor activity and temperature.

The prior art references cited by Pippin – Sheets and Georgiou – are more relevant to the involved claims reciting feature 6/38, and reflect the level of ordinary skill in the art at the time. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (agreeing with the Board's conclusion that "the level of ordinary skill in the art . . . was best determined by appeal to the references of record"). Sheets discloses detecting processor activity and reducing clock frequency in times of low activity. Sheets, col. 1, ll. 45-54 ("determining the processing load presented to the system and then reducing the clock frequency at which the system is driven, during times when the processing load is reduced"). By doing so, Sheets reduces the consumption of power from a battery. Sheets, col. 2, ll. 37-

43; col. 2, l. 65-col. 3, l. 8 ("[r]educing the clock frequency reduces the power consumed by microprocessor 101"). As Pippin points out, this is the same reason given in Thomas's involved patent for varying clock frequency based on processor activity. *See* Paper 44 at 11; Thomas '011, col. 5, ll. 40-42 ("The second embodiment is particularly advantageous for portable computing devices because it conserves battery life by using a sleep clock when no processing is needed."). Georgiou similarly discloses reducing clock frequency in times of low activity to reduce heat generation, and increasing clock frequency "if enough heat savings have been accumulated." Georgiou, Abstract; col. 2, ll. 8-28; col. 3, ll. 33-38. Sheets and Georgiou therefore teach varying clock frequency based on processor activity to (1) conserve battery life, and (2) reduce heat generation in times of low activity and increase performance speed when possible. Dr. McNutt admitted that clock frequency variation was known to achieve both benefits. *See* Paper 44 at 9-10.

Thomas has not presented sufficient and credible evidence that a person of ordinary skill in the art would not have found it obvious, in light of the count and the other prior art discussed above, to vary clock frequency based on both processor activity and temperature. Combining the known feature of clock frequency variation based on processor activity (as described in Sheets and Georgiou) with the known feature of clock frequency variation based on temperature (as described in the count) to arrive at the subject matter of the involved claims would have been a simple combination of familiar elements that yields predictable results. *See KSR*, 550 U.S. at 416. A person of ordinary skill also would have had reason to do so to conserve battery life, reduce heat

generation, and improve performance speed as taught by Sheets and Georgiou. Further, we see no reason why varying clock frequency based on both factors would have been uniquely challenging or otherwise beyond the level of skill of an ordinarily skilled artisan. *See id*. at 421 (an improved product in the art is obvious if that "product [is] not [one] of innovation but of ordinary skill and common sense"); *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161-62 (Fed. Cir. 2007). One with ordinary skill in the art is a person of ordinary creativity, not an automaton. *KSR*, 550 U.S. at 421.

Further, Thomas's arguments regarding the scope of the prior art, including the count, are unpersuasive. Thomas argues that the computer system disclosed in the count is limited in various respects such that it would not have been obvious to a person of ordinary skill to combine it with prior art disclosing activity detection and clock frequency variation based on processor activity. Paper 36 at 6-15; Paper 47 at 3-4. For instance, Thomas contends that based on the description in Pippin's specification, the "programmable" thermal sensor of the count functions like an on-off switch in outputting a single "interrupt signal" if the temperature exceeds a threshold, whereas the "temperature sensor" recited in Thomas's involved claims is capable of *measuring* temperature and performing actions based on that *measured* temperature. Paper 36 at 7, 10-11; Paper 47 at 3-4. We disagree that the scope of what the count would have suggested to a person of ordinary skill in the art is so limited, as it is the count itself rather than Pippin's specification that is deemed prior art for purposes of our analysis. A person of ordinary skill in the art also is presumed to have skills apart from what a prior art reference explicitly says. *See KSR*, 550 U.S. at 418. Further, even assuming that

the count's thermal sensor is limited in the manner argued by Thomas, Thomas has not adequately explained why the alleged limitations would prevent a skilled artisan from using his or her ordinary skill to combine it with other prior art. *See In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) ("[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review."); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.").

As to Sheets specifically, Thomas argues that the reference is cumulative and was considered during prosecution of Thomas '011. Paper 47 at 5. We disagree that the reference is cumulative to other references discussed herein. Also, whether the Examiner had considered the reference during prosecution of Thomas '011 does not change our view with respect to its disclosure. The reference, like Georgiou, is indicative of the level of ordinary skill in the art at the time. Thomas further argues that Georgiou's disclosure regarding reducing clock frequency when processor activity is low (e.g., when the processor is "idle") would not have suggested Thomas's involved claims directed to protecting a computer "in danger of overheating." Paper 47 at 5. We do not see, and Thomas has not pointed us to, any limitation in the claims requiring a specific, particularly heavy burden on the processor, or any reason why the claims would not cover varying clock frequency based on a certain lower activity rate.

Thomas has not met its burden to demonstrate by a preponderance of the

evidence that the involved claims reciting the feature of varying clock frequency based on both processor activity and temperature would not have been obvious in light of the count and the other applicable prior art discussed above.

Feature 17 – Fan Speed Dependent on Temperature

Claim 18 of Thomas '011 recites "a speed control signal for a fan with the speed being dependent on the chip temperature." Thomas argues that claim 18 would not have been obvious over the count and other prior art based on the feature of fan speed dependent on temperature.

We first note that the count recites a fan that is activated in response to an interrupt signal generated when the microprocessor temperature exceeds a threshold temperature. Thus, the issue before us is whether claim 18 of Thomas '011 (the sole involved claim reciting feature 17), which recites *speed control* for the fan and speed control *dependent on chip temperature*, would have been obvious to one of ordinary skill in the art given the count itself, which discloses a fan in general, and any other applicable prior art.

Thomas argues that the computer system of the count uses a single threshold temperature to generate a single interrupt signal that turns on the fan. Paper 36 at 16-17. According to Thomas, because the interrupt signal does not convey a temperature value (only that the threshold temperature has been reached), the count's computer system cannot implement fan speed control dependent on chip temperature. Paper 36 at 16-17. The question is not, however, what the count in isolation teaches, but rather whether the involved claim would have been obvious given the count and any other applicable prior art. As

explained below, fan speed control dependent on chip temperature was well known in the art and a person of ordinary skill would have been able to and would have had reason to incorporate the feature into the count's system.

The prior art references cited by Pippen – Dinh and Swamy – are relevant to the involved claim reciting feature 17. Paper 44 at 19-20. Dinh discloses that the speed of a fan is adjustable based on the temperature within the housing of a personal computer. Dinh, col. 1, ll. 10-13. In particular, Dinh discloses that it is desirable to have two fan speeds – low and high. Dinh, col. 1, ll. 29-35. To provide an efficient tradeoff between fan speed and noise, Dinh increases the fan speed "proportionally to the increase in the temperature." Dinh, col. 1, ll. 44-51. Swamy also discloses repeatedly measuring the temperature of a central processing unit and increasing the fan speed to cool the processor if the temperature remains high. Swamy, col. 7, ll. 34-41 ("For example, the signal may instruct the fan 240 to turn on or increase speed if already on."); col. 2, ll. 40-49. In addition, Dr. McNutt agreed that it was known to use variable speed fans for cooling microprocessors. Paper 47 at 22 (admitted fact 115).

Thomas has not presented sufficient and credible evidence demonstrating that in light of the count and other prior art discussed above, the involved claim reciting the feature of fan speed dependent on temperature would not have been obvious to a person of ordinary skill in the art. A person of ordinary skill in the art would have known based on Dinh and Swamy to operate the fan at multiple speeds and to have the fan speed depend on chip temperature, and would have appreciated incorporating these known features into the count's computer system

to arrive at the involved claim.[1] Doing so would have been a simple and common sense modification yielding predictable results and within the level of skill of an ordinarily skilled artisan. *See KSR*, 550 U.S. at 416. A person of ordinary skill also would have had reason to do so to achieve an optimal tradeoff between fan speed and noise and to counter persistent high temperature conditions, as taught by Dinh and Swamy.

Further, Thomas's arguments regarding the prior art are not persuasive, particularly as Thomas fails to account for prior art like Swamy, which takes periodic measurements of processor temperature and increases fan speed based on the changing temperature. Swamy, col. 7, ll. 10-60. Thomas also points to testimony from Dr. McNutt identifying Neal as the alleged "closest" prior art regarding fan speed control, arguing that because Neal's fan is always on unless it fails, Neal does not really teach "fan speed control." Paper 36 at 17-18. Neal, however, discloses using the frequency of a motor pulse to drive the various speeds of a fan, thereby increasing or decreasing airflow production (Neal, col. 5, ll. 31-36); it therefore teaches a fan with multiple speeds of operation and fan speed control. A person of ordinary skill in the art would have appreciated incorporating the known element of fan speed control from Neal into the count's

[1] Pippin argues that claim 18 of Thomas '011 would be anticipated by the count because it "activate[s]" a fan in response to a temperature signal (i.e., goes from a speed of zero to a speed above zero). Paper 44 at 17-18. Claim 18, however, recites "producing a speed control signal for a fan with the speed being dependent on the chip temperature." A person of ordinary skill in the art would not understand a "speed control signal for a fan" to encompass controlling a speed of zero; rather, the speed control signal controls the speed of an operating fan. Thus, we do not agree that claim 18 is anticipated by the count.

computer system, and further would have appreciated incorporating speed control dependent on chip temperature as taught by Dinh and Swamy, for the reasons explained above.

Thomas has not met its burden to demonstrate by a preponderance of the evidence that claim 18 of Thomas '011 reciting the feature of fan speed dependent on temperature would not have been obvious in light of the count and other applicable prior art.

Feature 40 – Clock Has an Overdrive Frequency

Thomas argues that claims 21 and 31 of Thomas '011 include the feature of a clock that has an overdrive frequency. Paper 36 at 18. For example, both claims recite that "the clock signal has an overdrive clock frequency when certain activity is present and the chip temperature is below a predetermined temperature." Thomas contends that claims 21 and 31 of Thomas '011 would not have been obvious over the count and any other applicable prior art based on this feature. Paper 36 at 18-19.

At the outset, we note that the count recites "clock circuitry for providing a clock signal for the microprocessor." As such, the count discloses a clock, but does not disclose that the clock has an overdrive frequency. Therefore, the issue before us is whether Thomas demonstrates by a preponderance of the evidence that the involved claims, which include feature 40 – a clock that has an overdrive frequency – would not have been obvious in light of the clock recited in the count in combination with any other applicable prior art. With this in mind, we turn to the merits of Thomas's arguments.

Thomas argues that the count does not disclose a method that employs an overdrive clock. Paper 36 at 19. According to Thomas, Pippen's specification discloses how to reduce or halt the normal clock frequency, but does not disclose frequencies that exceed the normal clock frequency. *Id*. As such, Thomas contends that the Pippen application does not suggest an overdrive clock, nor does it suggest any ability to invoke the overdrive clock "when certain activity is present and the chip temperature is below a predetermined threshold," as recited in claims 21 and 31. Paper 36 at 19 (citing Ex. 2001 ¶ 105). Thomas's argument that Pippen's specification does not disclose a clock that has an overdrive frequency is misplaced. Pippen's specification is not prior art for purposes of Thomas's Motion 1. The pertinent prior art is the subject matter of the count and other applicable prior art. A person of ordinary skill in the art also is presumed to have skills apart from what a prior art reference explicitly says. *See KSR*, 550 U.S. at 418.

Next, Thomas directs us to testimony from Dr. McNutt indicating that he is not aware of any prior art or the ordinary skill in the art that would have made the use of an overdrive clock obvious as disclosed in claims 21 and 31 when the invention was made. Paper 36 at 19 (citing Ex. 2001 ¶ 104). But there are pertinent prior art references with respect to feature 40. The prior art reference cited by Pippen – Georgiou – is relevant to claims 21 and 31 of Thomas '011, which include feature 40. Georgiou discloses increasing the rate of a clock for a chip to a higher rate than normally allowed or even beyond a maximum specified for the chip. Georgiou, col. 2, ll. 1-3, 29-30. As such, Georgiou teaches a clock with a clock frequency that is higher than normally allowed – otherwise

considered an overdrive clock.

A person of ordinary skill in the art would have appreciated modifying the clock recited in the count to include Georgiou's technique of increasing the clock frequency to a higher rate than normally allowed in order to arrive at the involved claims including feature 40. We conclude that this proffered combination would predictably result in a clock that has an overdrive frequency which provides the added benefit of improving the speed performance of the microprocessor recited in the count. *See* Georgiou, col. 3, ll. 33-38.

Further, we are not persuaded by Thomas's argument that Georgiou is incompatible with the device recited in the count because Georgiou's disclosure of counting up time spent in different activity states to estimate heat accumulation is in contrast to using a temperature sensor. Paper 47 at 7. Thomas's argument separately addresses the teachings of Georgiou and is insufficient to show that the count in combination with Georgiou does not render obvious the involved claims, which include feature 40. *See In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Circ. 1986); *Keller*, 642 F.2d at 426. Nevertheless, Georgiou discloses that it becomes beneficial to operate the chip at a higher clock rate when useful work is being done (i.e., certain activity is present) and there are enough heat savings accumulated through the use of a minimal clock rate. Georgiou, col. 3, ll. 33-38. In particular, a person of ordinary skill in the art would have understood that Georgiou's disclosure of accumulating heating savings through the use of a minimal clock rate necessarily entails the chip operating at a lower temperature, such as a temperature that is below the threshold temperature recited in the count.

We conclude that a person of ordinarily skill in the art would have

appreciated modifying the clock recited in the count to include Georgiou's technique of increasing the clock frequency to a higher rate than normally allowed when certain activity is present and the chip temperature is below a threshold temperature in order to arrive at the involved claims including feature 40. Because Georgiou's technique was used to improve the speed performance of a chip (col. 1, ll. 6-14), and a person of ordinary skill in the art would have recognized that it would improve the speed performance of a microprocessor in the same way, modifying the count with Georgiou's technique would have been obvious unless its actual application is beyond his or her skill. *See KSR*, 550 U.S. at 417. Thomas has not provided any evidence that modifying the microprocessor recited in the count to include Georgiou's technique would have been uniquely challenging or otherwise beyond the level of skill of an ordinarily skilled artisan. *See Leapfrog*, 485 F.3d at 1161-62.

It follows that Thomas has not demonstrated by a preponderance of the evidence that claims 21 and 31 of Thomas '011, which include feature 40 – a clock that has an overdrive frequency – would not have been obvious in light of the clock recited in the count and Georgiou discussed *supra*.

CONCLUSION

For all of the foregoing reasons regarding the above-identified claim features, Thomas has not satisfied its burden of proof in showing that it is entitled to the relief requested, i.e., to have claims 1-5, 8-24, and 29-32 of Thomas '011 designated as not corresponding to the count.

Thomas's Motion 1 is *denied*.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

C. DOUGLASS **THOMAS** and ALAN E. THOMAS
Junior Party
(Patent Nos. 5,974,557; 6,216,235; 6,487,668)[1]

v.

JACK D. **PIPPIN**
Senior Party
(Application 10/464,482)[2]

Patent Interference No. 105,802 (JL)
(Technology Center 2100)

Before JAMESON LEE, MICHAEL R. ZECHER, and JUSTIN T. ARBES, *Administrative Patent Judges*.

ARBES, *Administrative Patent Judge*.

Judgment – Merits – Bd. R. 127

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[1] Patents 5,974,557; 6,216,235; and 6,487,668 have been accorded the benefit of Application 08/262,754, filed June 20, 1994, now Patent 5,752,011. The real party in interest is IpVenture, Inc. Paper 12.
[2] Filed June 19, 2003. Accorded the benefit of Application 08/124,980, filed September 21, 1993. The real party in interest is Intel Corporation. Paper 4.

In a concurrent paper, Thomas's Motion 1 (Paper 29) seeking to designate certain claims of Thomas's involved patents as not corresponding to the count has been denied. There are no other pending motions in this interference. Thomas also indicated that as the junior party, it would not be filing a priority motion. Paper 25 at 2, 7. As such, Thomas concedes priority with respect to any claim left as corresponding to the count after consideration of Thomas's motion to designate claims as not corresponding to the count. *Id*. Accordingly, as Thomas's Motion 1 has been denied and all of Thomas's involved claims correspond to the count, it is now appropriate to enter judgment against party Thomas.

It is

ORDERED that judgment with respect to Count 1 is entered against junior party C. DOUGLASS THOMAS and ALAN E. THOMAS;

FURTHER ORDERED that claims 1-47 of junior party's involved Patent 5,974,557; claims 1-54 of junior party's involved Patent 6,216,235; and claims 1-52 of junior party's involved Patent 6,487,668, which correspond to Count 1, are cancelled;

FURTHER ORDERED that the parties shall note the requirements of 35 U.S.C. § 135(c) and Bd. R. 205; and

FURTHER ORDERED that a copy of this judgment shall be entered into the files of Patents 5,974,557, 6,216,235, and 6,487,668, and Application 10/464,482.

Interference No. 105,802
Thomas v. Pippin

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

C. DOUGLASS **THOMAS** and ALAN E. THOMAS
Junior Party
(Patent Nos. 5,974,557; 6,216,235; 6,487,668)

v.

JACK D. **PIPPIN**
Senior Party
(Application 10/464,482)

Patent Interference No. 105,802
(Technology Center 2100)

Before JAMESON LEE, MICHAEL R. ZECHER, and JUSTIN T. ARBES, *Administrative Patent Judges*.

ARBES, *Administrative Patent Judge*.

Decision – Motions – Bd. R. 125(a)

This interference was declared on April 18, 2011. The sole pending motion is Thomas's Motion 1, which seeks to designate the following claims of Thomas's involved patents as not corresponding to the count:

Patent 5,974,557 ("Thomas '557"): claims 24 and 25

Patent 6,216,235 ("Thomas '235"): claims 24-36, 41, 42, and 46-54

Patent 6,487,668 ("Thomas '668"): claims 1-5, 12-23, and 37-52

The remaining claims of Thomas's involved patents, which Thomas has not moved to designate as not corresponding to the count, are:

Patent 5,974,557: claims 1-23 and 26-47

Patent 6,216,235: claims 1-23, 37-40, and 43-45

Patent 6,487,668: claims 6-11 and 24-36

Pippin opposes Thomas's Motion 1. Because Thomas fails to demonstrate by a preponderance of the evidence that claims 24 and 25 of Thomas '557, claims 24-36, 41, 42, and 46-54 of Thomas '235, and claims 1-5, 12-23, and 37-52 of Thomas '668 should be designated as not corresponding to the count, Thomas's Motion 1 is *denied*.

PROCEDURAL HISTORY

The parties' initial requests for authorization to file various motions were resolved in an Order dated June 16, 2011. Paper 25. Thomas requested authorization to file a motion to designate its involved claims as not corresponding to the count, citing 113 allegedly distinguishing features of its involved claims. Paper 22. Thomas was ordered to limit its list to a reasonable number of limitations and authorized to file a motion to designate its involved claims as not corresponding to the count only on the basis of numbered features 1, 6, 7, 9, 11, 12, 14, 15, 17, 18, 19, 21, 24, 86, 93, and 98 in Thomas's list. Paper 25 at 6. The Order specifically noted that the motion "must account for not just the count as prior art, or just the prior art references of record in either party's involved cases, but also any prior art otherwise known to party Thomas as well as

the level of ordinary skill in the art." Paper 25 at 6. The Order also required Thomas to set forth the closest prior art feature known to Thomas and the closest known feature within the level of ordinary skill in the art, giving specific examples of what should be provided for features 1 and 6. Paper 25 at 6-7.

In a subsequent Order, Thomas also was authorized to rely on feature 46 to support the attempt to designate claims 12 and 49 of Thomas '668 as not corresponding to the count; on features 62 and 63 to support the attempt to designate claim 4 of Thomas '235 as not corresponding to the count; on feature 67 to support the attempt to designate claim 7 of Thomas '235 as not corresponding to the count; and on feature 69 to support the attempt to designate claim 24 of Thomas '235 as not corresponding to the count. Paper 27 at 2-3.

All other requests for motions by the parties were either dismissed or denied. Paper 25 at 3-7. Thomas also indicated that as the junior party, it would not be filing a preliminary statement or priority motion. Paper 25 at 2, 7. Thus, Thomas's Motion 1 is the only pending motion in this interference.

FINDINGS OF FACT

The following findings of fact are supported by a preponderance of evidence.

1. Junior party Thomas is involved in this interference on the basis of three patents: Patent 5,974,557; Patent 6,216,235; and Patent 6,487,668.
2. Senior party Pippin is involved in this interference on the basis of Application 10/464,482, filed June 19, 2003.
3. Thomas's real party in interest is IpVenture, Inc. Paper 12.

4. Pippin's real party in interest is Intel Corporation. Paper 4.

5. The sole count in this interference is Count 1, which is defined as:

Claim 34 of Pippin's Application 10/464,482

6. Claim 34 of Pippin's Application 10/464,482 reads as follows:

> 34. A computer system comprising:
>
> an active cooling device;
>
> a microprocessor comprising:
>
> a register storing a register value corresponding to a threshold temperature;
>
> a programmable thermal sensor receiving the register value, wherein the programmable thermal sensor generates a first interrupt signal if a microprocessor temperature exceeds the threshold temperature,
>
> wherein the active cooling device is activated in response to the interrupt signal, and
>
> wherein the active cooling device comprises a fan; and
>
> clock circuitry for providing a clock signal for the microprocessor,
>
> wherein a frequency of the clock signal is reduced in response to the first interrupt signal.

The Thomas Involved Patents

7. The Thomas involved patents disclose that "[t]he second embodiment is particularly advantageous for portable computing devices because it conserves battery life by using a sleep clock when no processing is needed." *E.g.*, Thomas '557, col. 4, l. 66-col. 5, l. 1.

Sheets (Patent 4,670,837)

8. Sheets discloses determining the current rate of required microprocessor activity and varying the clock frequency of the microprocessor based on that rate. Abstract; col. 1, ll. 45-54; col. 3, ll. 18-21.

9. As described in Sheets, the "present invention is directed to reducing the amount of energy drawn by system 100 from . . . a [Direct Current] DC source," such as a battery. Col. 2, ll. 37-43.

10. Sheets discloses: "[Voltage-controlled oscillator (VCO) 102] gradually adjusts the frequency of the clock signal transmitted to microprocessor 101 to the computed frequency in response to the digital word. Reducing the clock frequency reduces the power consumed by microprocessor 101 and, by reducing the required access rate to the associated devices, i.e., ROM 107, RAM 108, and I/O port 109, also reduces the power consumed by those devices. The power reduction is substantially directly proportional to the reduction of the clock frequency. For example, a frequency reduction from 20 megahertz to 10 megahertz will result in a saving of approximately 50%." Col. 2, l. 65-col. 3, l. 8.

Georgiou (Patent 5,189,314)

11. Georgiou discloses detecting processor activity and varying the clock frequency of the processor based on that activity. Abstract; col. 2, ll. 10-20, 40-41.

12. As described in Georgiou, "[i]n accordance with this invention, heat production is controlled in accordance with needs through changes in clock

rate (i.e., by slowing down the clock rate when a circuit is idling), in order to make it possible to speed up the clock rate when performing either special critical work or useful work in general." Col. 2, ll. 10-16.

13. Georgiou discloses that "[w]hen a circuit is switched to a lower clock rate, there is a heat generation savings. Given a certain heat dissipation capacity (based on the characteristics of the chip and package), it is possible to switch the clock to a higher rate, if enough heat savings have been accumulated." Col. 2, ll. 20-25; col. 3, ll. 33-38.

Pippin '578 (Patent 5,838,578)

14. Application 08/660,016, which issued as Pippin '578, was filed on June 6, 1996.

15. Pippin '578 is a continuation of application 08/124,980, filed on September 21, 1993.

16. Pippin '578 issued on November 17, 1998.

17. Pippin '578 discloses generating a first interrupt signal based on the temperature of a microprocessor exceeding a first threshold temperature, activating a fan and reducing clock frequency in response to the first interrupt signal, and programming a new, higher threshold temperature in response to the first interrupt signal. Col. 12, ll. 24-51.

18. Pippin '578 discloses generating a second interrupt signal based on the temperature of the microprocessor exceeding the new, higher threshold temperature, and further reducing clock frequency in response. Col. 12, ll. 51-54.

19. Pippin '578's two-stage configuration "provides close loop control of the microprocessor system clock frequency, thereby automatically reducing the temperature when overheating occurs." Col. 12, ll. 54-58.

Swamy (Patent 5,623,594)

20. Swamy discloses an "overtemperature detection circuit" that takes "periodic readings" of a processor's operating temperature to determine whether the temperature exceeds a "predetermined maximum allowed temperature." Col. 7, ll. 10-28; col. 2, ll. 30-40.

21. Swamy discloses sending a signal to various components to attempt to cool the processor if the predetermined temperature is exceeded. "For example, the signal may instruct the fan 240 to turn on or increase speed if already on. Alternatively, the signal may send a message to the user through the video subsystem 280, or it may instruct the [Central Processing Unit] CPU clock 250 to decrease the operational speed of the CPU 260. As a last resort, the signal may instruct the CPU 260 to save the document presently being worked on to the disk 320 and turn the power to the [Personal Computer] PC off." Col. 7, ll. 34-41; col. 2, ll. 40-51.

22. Swamy discloses that "[t]he component to which the signal is sent may depend on how extreme the temperature of the CPU 260 has become and how long the temperature has been at the excessive level." Col. 7, ll. 30-33.

23. Swamy discloses that the signals sent in an attempt to cool the processor "can be programed to occur in several different combinations." Col. 6, l.

64-col. 7, l. 1.

Neal (Patent 5,483,102)

24. Neal discloses the thermal management of a semiconductor device and, in particular, reducing an internal clock frequency of the semiconductor device upon receiving a first signal indicating fan failure and/or a second signal indicating thermal overload. Col. 1, ll. 9-14.

25. Neal discloses that fans for cooling semiconductor devices commonly employ a chip set to generate a motor pulse at a given frequency to drive a fan motor. Col. 5, ll. 31-33. By altering the frequency of the motor pulse, Neal discloses that the fan is driven at various speeds, thereby increasing or decreasing the fan's airflow production. Col. 5, ll. 33-36.

Dinh (Patent 5,526,289)

26. Dinh discloses a fan cooling subsystem for a personal computer wherein the speed of the fan is adjustable based on the temperature within the housing of the personal computer. Col. 1, ll. 10-13.

27. Dinh discloses that it may be desirable to have two speeds for a fan: (1) when the computer's elements are operating at a low temperature, the fan blows quietly at a low speed, and (2) when the computer's elements are hot, the fan blows rapidly and loudly at a high speed. Col. 1, ll. 29-35.

28. Dinh discloses that "there is a need for a fan subsystem which can increase the fan speed proportionally to the increase in the temperature of the computer's elements. Such a fan subsystem would evenly match the temperature inside the computer with the fan speed necessary to cool the

system. Thus, a computer system with such a fan subsystem would provide the most efficient trade off between fan speed and sound quality." Col. 1, ll. 44-51.

ANALYSIS

Thomas's Motion 1 seeks to designate claims 24 and 25 of Thomas '557, claims 24-36, 41, 42, and 46-54 of Thomas '235, and claims 1-5, 12-23, and 37-52 of Thomas '668 as not corresponding to the count. Thomas as the moving party bears the burden of proof to establish entitlement to the relief requested. 37 C.F.R. § 41.121(b). A claim corresponds to a count if the subject matter of the count, treated as prior art to the claim, would have anticipated or rendered obvious the subject matter of the claim. 37 C.F.R. § 41.207(b)(2). Thus, unlike other situations, such as a civil action for patent infringement where the moving defendant asserts that the claimed subject matter is anticipated or obvious, Thomas as the moving party bears the burden of establishing a negative, i.e., that the subject matter of the claims is *not* anticipated or obvious in light of the count and any other applicable prior art.

It is evident that the count, if treated as prior art, would not have anticipated any of the claims which Thomas seeks to designate as not corresponding to the count. Thus, the proper analysis is one of obviousness per *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966). The pertinent factual inquiries are (1) the scope and content of the prior art, (2) the differences between the claimed invention and the prior art, (3) the level of ordinary skill in the art, and (4) any objective evidence of nonobviousness. *Id*. at

17. The obviousness conclusion is reached from the perspective of the hypothetical person having ordinary skill in the art who is presumed to be aware of all pertinent prior art. *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 454 (Fed. Cir. 1985). Also, a person of ordinary skill in the art has ordinary creativity and is not an automaton. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). If a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Id*. at 417.

To prevail in its motion, Thomas must demonstrate by a preponderance of the evidence that each of the claims it seeks to designate as not corresponding to the count would not have been obvious to one of ordinary skill in the art, given the subject matter of the count as prior art and any other applicable prior art. Thomas in its motion identifies a number of features in its claims that allegedly distinguish the count and other prior art, and groups the involved claims accordingly. We address each group of claims in turn.

For all of the reasons discussed below, Thomas has not satisfied its burden of proof that the collective differences between each claim it seeks to designate as not corresponding to the count and the subject matter of the count are such that the claim would not have been obvious over the count and other applicable prior art.

Feature 6 – Varying Clock Frequency Based on Processor Activity and Temperature

Thomas argues that claims 24 and 25 of Thomas '557, claims 30, 31, 41, 42, 50, 53, and 54 of Thomas '235, and claims 1-5, 18, 19, and 37-48 of Thomas '668 recite the feature of varying clock frequency based on both processor activity and temperature. For example, claim 1 of Thomas '668 recites a clock control unit operating to "alter the clock frequency of the clock signal in a gradual and dynamic manner based on the temperature of said processing unit as monitored by said temperature sensor and on the activity of said processing unit as monitored by said activity detector." Thomas contends that the involved claims would not have been obvious over the count and other prior art based on this feature.

At the outset, we note that claims 30 and 41 of Thomas '235 and claim 18 of Thomas '668 recite varying *fan speed*, not clock frequency, based on processor activity and temperature. Thomas acknowledges that these claims do not have feature 6.[1] Paper 38 at 18 (admitted fact 77). Accordingly, the analysis below applies to the remaining claims 24 and 25 of Thomas '557, claims 50, 53, and 54 of Thomas '235, and claims 1-5, and 37-48 of Thomas '668.

The count discloses varying clock frequency based on temperature, not processor activity. Thomas, however, admits in the background section of its involved patents that clock frequency variation based on processor activity was known at the time. *See, e.g.*, Thomas '557, col. 1, ll. 18-20 ("It is also known to

[1] Claim 30 of Thomas '235 includes feature 69 and claim 18 of Thomas '668 includes feature 46, however, as discussed below.

suspend or slow a computer's processor (e.g., microprocessor, CPU) when the processor is not actively processing. . . . [In one exemplary reference,] the sleep mode either stops the clock or slows it to 4 MHz."); Paper 38 at 18 (admitted fact 80). Thus, clock frequency variation based on processor activity and based on temperature were both old and well known individually in the prior art. The issue before us is whether the claims reciting the combined feature of varying clock frequency based on processor activity *and* temperature would have been obvious to one of ordinary skill in the art given the count itself and other applicable prior art.

Thomas points to testimony from its expert, Dr. Douglas P. McNutt, identifying Nakagawa (Japanese Patent Application 1990-83720, Exhibit 2010) as "the closest known prior art with respect to the feature of frequency reduction" and Kenny (Patent 5,287,292) as "the closest prior art known with respect to the feature of activity monitoring." Paper 29 at 13-15. We disagree that Nakagawa and Kenny are the closest prior art references for purposes of feature 6. Indeed, Thomas admits that "[t]here is no activity detector in Nakagawa." Paper 29 at 13. Nakagawa therefore cannot be the closest prior art for claims including the feature of varying clock frequency based on processor activity and temperature.

The prior art references cited by Pippin – Sheets and Georgiou – are more relevant to the involved claims reciting feature 6, and reflect the level of ordinary skill in the art at the time. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (agreeing with the Board's conclusion that "the level of ordinary skill in the art . . . was best determined by appeal to the references of record"). Sheets discloses detecting processor activity and reducing clock frequency in times of

low activity. Sheets, col. 1, ll. 45-54 ("determining the processing load presented to the system and then reducing the clock frequency at which the system is driven, during times when the processing load is reduced"). By doing so, Sheets reduces the consumption of power from a battery. Sheets, col. 2, ll. 37-43; col. 2, l. 65-col. 3, l. 8 ("[r]educing the clock frequency reduces the power consumed by microprocessor 101"). As Pippin points out, this is the same reason given in Thomas's involved patents for varying clock frequency based on processor activity. *See* Paper 35 at 14; Thomas '557, col. 4, l. 66-col. 5, l. 1 ("The second embodiment is particularly advantageous for portable computing devices because it conserves battery life by using a sleep clock when no processing is needed."). Georgiou similarly discloses reducing clock frequency in times of low activity to reduce heat generation, and increasing clock frequency "if enough heat savings have been accumulated." Georgiou, Abstract; col. 2, ll. 8-28; col. 3, ll. 33-38. Sheets and Georgiou therefore teach varying clock frequency based on processor activity to (1) conserve battery life, and (2) reduce heat generation in times of low activity and increase performance speed when possible. Dr. McNutt admitted that clock frequency variation was known to achieve both benefits. *See* Paper 35 at 13.

Thomas has not presented sufficient and credible evidence that a person of ordinary skill in the art would not have found it obvious, in light of the count and the other prior art discussed above, to vary clock frequency based on both processor activity and temperature. Combining the known feature of clock frequency variation based on processor activity (as described in Sheets and Georgiou) with the known feature of clock frequency variation based on

temperature (as described in the count) to arrive at the subject matter of the involved claims would have been a simple combination of familiar elements that yields predictable results. *See KSR*, 550 U.S. at 416. A person of ordinary skill also would have had reason to do so to conserve battery life, reduce heat generation, and improve performance speed as taught by Sheets and Georgiou. Further, we see no reason why varying clock frequency based on both factors would have been uniquely challenging or otherwise beyond the level of skill of an ordinarily skilled artisan. *See id*. at 421 (an improved product in the art is obvious if that "product [is] not [one] of innovation but of ordinary skill and common sense"); *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161-62 (Fed. Cir. 2007). One with ordinary skill in the art is a person of ordinary creativity, not an automaton. *KSR*, 550 U.S. at 421.

Further, Thomas's arguments regarding the scope of the prior art, including the count, are unpersuasive. Thomas argues that the computer system disclosed in the count is limited in various respects such that it would not have been obvious to a person of ordinary skill to combine it with prior art disclosing activity detection and clock frequency variation based on processor activity. Paper 29 at 7-13; Paper 38 at 5-6. For instance, Thomas contends that based on the description in Pippin's specification, the "programmable" thermal sensor of the count functions like an on-off switch in outputting a single "interrupt signal" if the temperature exceeds a threshold, whereas the "temperature sensor" recited in Thomas's involved claims is capable of *measuring* temperature and performing actions based on that *measured* temperature. Paper 29 at 7, 10-11; Paper 38 at 5-6. We disagree that the scope of what the count would have suggested to a person

of ordinary skill in the art is so limited, as it is the count itself rather than Pippin's specification that is deemed prior art for purposes of our analysis. A person of ordinary skill in the art also is presumed to have skills apart from what a prior art reference explicitly says. *See KSR*, 550 U.S. at 418. Further, even assuming that the count's thermal sensor is limited in the manner argued by Thomas, Thomas has not adequately explained why the alleged limitations would prevent a skilled artisan from using his or her ordinary skill to combine it with other prior art. *See In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) ("[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review."); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.").

As to Sheets and Georgiou specifically, Thomas argues that the references are cumulative and were considered during prosecution of Thomas '235 and Thomas '668. Paper 38 at 6-8. We disagree that the references are cumulative to other references discussed herein. Also, whether the Examiner had considered them during prosecution of Thomas '235 and Thomas '668 does not change our view with respect to their disclosure. The references are indicative of the level of ordinary skill in the art at the time. Thomas further argues that Sheets and Georgiou relate only to reducing clock frequency when processor activity is low (e.g., when the processor is "idle"), and therefore would not have suggested Thomas's involved claims directed to a computer that is "working hard (a heavy

processing burden) and in danger of overheating." Paper 38 at 7-9. We do not see, and Thomas has not pointed us to, any limitation in the claims requiring a specific, particularly "heavy" burden on the processor, or any reason why the claims would not cover varying clock frequency based on a certain lower activity rate.

Thomas has not met its burden to demonstrate by a preponderance of the evidence that the involved claims reciting the feature of varying clock frequency based on both processor activity and temperature would have been nonobvious in light of the count and other applicable prior art.

Feature 1 – An Activity Detector Monitoring Activity of a Processing Unit

Claims 46-54 of Thomas '235 recite an "activity detector that monitors activity of said processing unit" and a clock control unit that operates to alter clock frequency based on the activity of the processing unit. Thomas contends that the involved claims would not have been obvious over the count and other prior art based on this feature. Thomas's arguments for feature 1 largely repeat those made with respect to feature 6. *See* Paper 29 at 22-24; Paper 38 at 8-9. Thomas points to the allegedly "restricted control scheme" of the thermal sensor in the count, and cites Dr. McNutt's testimony that Kenny is the closest prior art known for "monitoring processor activity for temperature control." Paper 29 at 23.

We disagree. As discussed above, activity detection was well known in the prior art, and it would have been well within the skill of a person of ordinary skill in the art to incorporate such functionality into the computer system recited in the

count so that clock frequency could be varied based on the activity. *See, e.g.*, Thomas '557, col. 1, ll. 18-20; Paper 38 at 3 ("Dr. McNutt agreed . . . that activity detectors . . . were known in the art"), 18 (admitted fact 80). Thus, because we conclude that Thomas has not met its burden to show that the involved claims reciting varying clock frequency based on both processor activity *and* temperature would have been nonobvious, for the reasons discussed above, we likewise conclude that Thomas has not met its burden to show that the involved claims reciting an activity detector monitoring the activity of a processing unit would not have been obvious based on the count and other applicable prior art.

Feature 46 – First Activating a Fan if Temperature Exceeds a First Threshold, and Then Reducing Clock Frequency if Temperature Exceeds a Second Threshold

Thomas argues that claims 12-23 and 49-52 of Thomas '668 recite the feature of first activating a fan if a first temperature threshold is exceeded, and then reducing clock frequency if a second temperature threshold is exceeded. For example, claim 49 of Thomas '668 recites comparing the temperature of a processor to first and second predetermined temperatures, "activating a cooling fan when the temperature of the processor exceeds the first predetermined temperature," and "reducing operational clock frequency of the processor when the temperature of the processor exceeds the second predetermined temperature." Thomas contends that the involved claims would not have been obvious over the count and other prior art based on this "two-stage cooling approach" of *first* activating a fan if a *first* temperature threshold is exceeded, and *then* reducing clock frequency if a *second* temperature threshold is exceeded. Paper 29 at 20-

22. Thomas does not point to any prior art reference as the closest prior art for purposes of feature 46, instead citing Dr. McNutt's testimony that he is not aware of any prior art that would have suggested the involved claims. Paper 29 at 21-22. We are not persuaded by Thomas's arguments.

While Thomas does not point to any prior art other than the count itself, we find the references cited by Pippin – Pippin '578 and Swamy – relevant to the involved claims reciting feature 46 and indicative of the level of ordinary skill in the art. Pippin '578 is prior art to Thomas's involved patents under 35 U.S.C. § 102(e) because it is a continuation of an application filed on September 21, 1993 (prior to Thomas's admitted benefit date of June 20, 1994) and issued on November 17, 1998.[2] Pippin '578 discloses generating a first interrupt signal based on the temperature of a microprocessor exceeding a first threshold temperature, activating a fan and reducing clock frequency in response to the first interrupt signal, and programming a new, higher threshold temperature in response to the first interrupt signal. Pippin '578, col. 12, ll. 24-51. Then, if the processor heats up more and exceeds the new, higher threshold temperature, a second interrupt signal is generated and the clock frequency is further reduced. Pippin '578, col. 12, ll. 51-54. Thus, the only difference between Pippin '578's two-stage approach and that of the involved claims is that Pippin '578 performs *both* actions (activating a fan and reducing clock frequency) in the first stage, rather than *just* activating the fan. Notably, however, the involved claims do not preclude also reducing clock frequency in the first stage; Pippin '578 therefore

[2] Thomas in its Reply (Paper 38) did not dispute that Pippin '578 is prior art for purposes of Thomas's motion.

discloses the feature that according to Thomas distinguishes over the prior art.

Further, Pippin '578 discloses that its two-stage configuration "provides close loop control of the microprocessor system clock frequency, thereby automatically reducing the temperature when overheating occurs." Pippin '578, col. 12, ll. 54-58. Dr. McNutt also agreed that "the idea of activating a fan followed by reducing clock frequency, if necessary, is disclosed in the Pippin application." *See* Paper 35 at 25.

Swamy similarly describes a multiple-stage process of periodically determining the processor's temperature and *either* activating a fan or reducing clock frequency in response to the processor temperature exceeding predetermined thresholds. Swamy, col. 7, ll. 10-41. Which specific action is taken in a particular circumstance "may depend on how extreme the temperature of the CPU 260 has become and how long the temperature has been at the excessive level," and the actions can be taken in "different combinations." Swamy, col. 6, l. 64-col. 7, l. 1; col. 7, ll. 30-33. Thus, Swamy also teaches a multiple-stage process with the actions (activating a fan and reducing clock frequency) taken in different sequences based on different temperature thresholds.

Thomas has not presented sufficient and credible evidence that a person of ordinary skill in the art would not have found it obvious, in light of the count and the other prior art discussed above, to first activate a fan if a first temperature threshold is exceeded and then reduce clock frequency if a second temperature threshold is exceeded. The count itself discloses performing both actions based on the temperature exceeding a single threshold, and a person of ordinary skill in the art would have known, based on Pippin '578 and Swamy, to perform the

actions in sequence based on two threshold temperatures. Doing so would have been a simple and common sense modification yielding predictable results and within the level of skill of an ordinarily skilled artisan. *See KSR*, 550 U.S. at 416. A person of ordinary skill also would have had reason to do so to automatically reduce the processor's temperature when overheating occurs, and to further reduce the processor's temperature when the temperature rises and additional cooling is needed, as taught by Pippin '578. Further, the particular sequence of activating a fan first and then reducing clock frequency would have been a choice among a finite number of known, predictable solutions (i.e., perform one before the other, or perform both at the same time) for a person of ordinary skill in the art.

As with the other features discussed above, Thomas's arguments regarding the scope of the prior art (including the count) are unpersuasive. According to Thomas, because the computer system recited in the count generates an interrupt signal based on a single threshold temperature and performs both actions of activating a fan and reducing clock frequency in response to that interrupt signal, "it is not possible to separate these two different actions by time or temperature." Paper 29 at 16-17, 20-22. Thomas also points to the allegedly "specialized nature" and "restricted capabilities" of the sensor disclosed in the count (interpreted in light of the Pippin application) and argues that Pippin did not explain how one of ordinary skill would actually modify the disclosed sensor to perform staggered cooling steps. Paper 38 at 10-12. As explained above, however, the count teaches performing both actions (activating a fan and reducing clock frequency) based on a single threshold temperature, and Pippin '578 and

Swamy teach performing the actions in sequence based on two thresholds. We see no reason why an artisan possessing ordinary skill who is aware of the prior art would not have been able to modify the sensor of the count, which uses one threshold temperature to perform both actions, to test for two threshold temperatures and perform the actions in sequence. Again, a person of ordinary skill in the art has ordinary creativity and is not an automaton. *KSR*, 550 U.S. at 421.

Thomas has not met its burden to demonstrate by a preponderance of the evidence that the involved claims reciting the feature of first activating a fan if a first temperature threshold is exceeded and then reducing clock frequency if a second temperature threshold is exceeded would have been nonobvious in light of the count and other applicable prior art.

Feature 69 – First Reducing Clock Frequency if Temperature Exceeds a First Threshold, and Then Activating a Fan if Temperature Exceeds a Second Threshold

Claims 24-36 of Thomas '235 recite a thermal manager that "causes the clocking frequency for said microprocessor to be reduced to provide thermal management when the temperature indication indicates that the temperature of said microprocessor exceeds the first temperature threshold, and activates said fan when the temperature indication indicates that the temperature of said microprocessor exceeds the second temperature threshold." Thus, these claims recite the opposite of feature 69: *first* reducing clock frequency if a first temperature threshold is exceeded, and *then* activating a fan if a second temperature threshold is exceeded. Thomas contends that the involved claims

would not have been obvious over the count and other prior art based on this feature, and makes arguments similar to those made with respect to feature 69. Paper 29 at 16-19; Paper 38 at 10-13.

For the reasons discussed above for feature 46, we disagree with Thomas that a "two-stage cooling approach" involving two temperature thresholds would have been a nonobvious modification to the system disclosed in the count. We also disagree that the particular sequence of reducing clock frequency first and activating a fan second would have been a nonobvious modification. Thomas points to Dr. McNutt's testimony regarding Nakagawa as applicable prior art for purposes of feature 69, but acknowledges that Nakagawa does not use a fan. *See* Paper 29 at 17-18; Paper 38 at 31 (admitted fact 165). Nakagawa therefore cannot be the closest prior art for purposes of claims reciting activating a fan.

The prior art references cited by Pippin – Pippin '578 and Swamy – are more relevant to the involved claims reciting the feature of reducing clock frequency first and activating a fan second. Pippin '578 discloses performing the same actions but in the reverse order. Pippin '578, col. 12, ll. 24-54. Swamy contemplates "different combinations" of the two actions, and choosing whether to reduce clock frequency or activate a fan based on "how extreme the temperature of the [processor] has become." Swamy, col. 6, l. 64-col. 7, l. 33. Dr. McNutt also admitted that it was known at the time to "use a fan as a *last resort* to cool as a way of conserving power especially for battery-powered computers." *See* Paper 35 at 28 (emphasis added).

Thomas has not presented sufficient and credible evidence demonstrating that in light of the count, Pippin '578, and Swamy, the involved claims reciting

first reducing clock frequency and then activating a fan would have been nonobvious to a person of ordinary skill in the art. Again, the count itself discloses performing both actions based on the temperature exceeding a single threshold, and a person of ordinary skill in the art would have known, based on Pippin '578 and Swamy, to perform the actions at different times and in different combinations based on two threshold temperatures. Doing so would have been a simple and common sense modification yielding predictable results and within the level of skill of an ordinarily skilled artisan. *See KSR*, 550 U.S. at 416. A person of ordinary skill also would have had reason to do so to reduce temperature while conserving power, as acknowledged by Dr. McNutt. *See* Paper 35 at 28. Further, as with feature 46, the particular sequence of reducing clock frequency first and then activating a fan would have been a choice among a finite number of known, predictable solutions for a person of ordinary skill in the art.

Thomas has not met its burden to demonstrate by a preponderance of the evidence that the involved claims reciting the feature of first reducing clock frequency if a first temperature threshold is exceeded and then activating a fan if a second temperature threshold is exceeded would have been nonobvious in light of the count and other applicable prior art.

Feature 14 – Multi-Speed Fan

Feature 17 – Fan Speed Dependent on Temperature

Thomas argues that claims 25, 34, and 36 of Thomas '235 recite the feature of fan speed dependent on temperature (feature 17), and claim 14 of Thomas '668 recites the features of both a multi-speed fan (feature 14) and fan speed dependent

on temperature (feature 17). For example, as to feature 14, claim 14 of Thomas '668 recites a "variable speed fan." As to feature 17, claim 25 of Thomas '235 recites that "the speed of said fan is dependent upon the extent that the temperature of said microprocessor exceeds the second temperature threshold." Thomas contends that the involved claims would not have been obvious over the count and other prior art based on these features.

Feature 14: We begin our discussion with feature 14, and note that the count recites a fan that is activated in response to an interrupt signal generated when the microprocessor temperature exceeds a threshold temperature. However, the fan recited in the count does not have multiple speeds of operation (e.g., a fast and slow speed). Thus, the issue before us regarding feature 14 is whether claim 14 of Thomas '668 (the sole involved claim reciting feature 14) reciting a *multi-speed* fan would have been obvious to one of ordinary skill in the art given the count itself, which discloses a fan in general, and other applicable prior art.

Thomas argues that because the computer system of the count uses a single threshold temperature to generate a single interrupt signal, which directs both fan activation and clock frequency reduction, it is "not possible" to separate the two different actions by time and temperature. Paper 29 at 20. Thomas fails to explain, however, why the fan of the count's system would be incapable of operating at multiple speeds. Further, the question is not what the count in isolation teaches, but rather whether the involved claim would have been obvious given the count and any other applicable prior art. As explained below, multi-speed fans were well known in the art and a person of ordinary skill would have had reason to incorporate the feature into the count's computer system. Thomas's

argument therefore is unpersuasive.

Thomas also points to testimony from Dr. McNutt identifying Neal as "the closest prior art known with respect [to] the feature of fan speed and frequency." Paper 29 at 20. Thomas argues that because Neal's fan is always on unless it fails, Neal does not teach "fan speed control." Paper 29 at 20. Contrary to Thomas's argument, however, Neal discloses using the frequency of a motor pulse to drive the various speeds of a fan, thereby increasing or decreasing airflow production. Neal, col. 5, ll. 31-36. Consequently, Neal not only teaches fan speed control, but also teaches that the fan has multiple speeds of operation. A person of ordinary skill in the art would have appreciated combining the known element of controlling multiple speeds of operation in a fan, as taught by Neal, with the count's computer system comprising a fan, in order to arrive at claim 14 of Thomas '668. This would have been nothing more than a simple combination of familiar elements according to known methods that yields a predictable result. *See KSR*, 550 U.S. at 416.

Moreover, the prior art reference cited by Pippen – Dinh – is relevant to feature 14. Paper 35 at 20-21. Dinh discloses that the speed of a fan is adjustable based on the temperature within the housing of a personal computer. Dinh, col. 1, ll. 10-13. In particular, Dinh discloses that it is desirable to have two fan speeds – low and high. Dinh, col. 1, ll. 29-35. As such, Dinh teaches a multi-speed fan that can operate at low and high speeds. In addition, Dr. McNutt agreed that it was known to use variable speed fans for cooling microprocessors. Paper 38 at 25 (admitted fact 125). A person of ordinary skill in the art would have appreciated combining a multi-speed fan that can operate at low and high speeds,

as taught by Dinh, with the fan recited in the count to arrive at claim 14 of Thomas '668. Further, a person of ordinary skill in the art would have been motivated to make the combination because Dinh explicitly discloses a need in the art for "a fan . . . which can increase the fan speed proportionally to the increase in the temperature of [a] computer's elements." Dinh, col. 1, ll. 44-46.

Thomas has not met its burden to demonstrate by a preponderance of the evidence that the involved claim reciting the feature of a multi-speed fan would not have been obvious in light of the count and other applicable prior art.

Feature 17: Turning to feature 17, we again note that the count recites activating a fan in response to an interrupt signal generated when the microprocessor temperature exceeds a threshold temperature. Thus, the issue before us regarding feature 17 is whether the involved claims reciting varying the speed of the fan based on temperature would have been obvious to one of ordinary skill in the art given the count itself, which discloses a fan in general, and any other applicable prior art.

Thomas does not point to any prior art reference as the closest prior art for purposes of feature 17 specifically (instead referring to Neal as "the closest prior art known with respect [to] the feature of fan speed and frequency"). Paper 29 at 20. We find the prior art references cited by Pippen – Dinh and Swamy – relevant to feature 17. Paper 35 at 20-22. Dinh discloses adjusting the speed of a fan based on the temperature within a personal computer housing. Dinh, col. 1, ll. 10-13. To provide an efficient tradeoff between fan speed and noise, Dinh increases the fan speed "proportionally to the increase in the temperature." Dinh, col. 1, ll. 44-51. Swamy discloses repeatedly measuring the temperature of a

central processing unit and increasing the fan speed to cool the processor if the temperature remains high. Swamy, col. 7, ll. 10-12, 34-41 ("For example, the signal may instruct the fan 240 to turn on or increase speed if already on."); col. 2, ll. 40-49.

Thomas has not presented sufficient and credible evidence demonstrating that in light of the count, Dinh, and Swamy, the involved claims reciting the feature of fan speed dependent on temperature would not have been obvious to a person of ordinary skill in the art. A person of ordinary skill in the art would have known based on Dinh and Swamy to operate the fan at multiple speeds and to have the fan speed depend on temperature.[3] Doing so would have been a simple and common sense modification yielding predictable results and within the level of skill of an ordinarily skilled artisan. *See KSR*, 550 U.S. at 416. A person of ordinary skill also would have had reason to do so to achieve an optimal tradeoff between fan speed and noise and to counter persistent high temperature conditions, as taught by Dinh and Swamy.

Further, Thomas's arguments regarding the prior art are not persuasive.

[3] Pippin argues that the involved claims reciting feature 17 would be anticipated by the count because it "activate[s]" a fan in response to a temperature signal (i.e., goes from a speed of zero to a speed above zero). Paper 35 at 18-19. The involved claims of Thomas '235 reciting feature 17, however, recite that the "fan is *operable* in a plurality of different speeds," and the involved claim of Thomas '668 recites that "when said thermal manager *activates* said fan, the speed of said fan is dependent on the temperature indication." A person of ordinary skill in the art would not understand a fan to be *operating* or to have been *activated* when the fan has a speed of zero. Thus, we do not agree that the involved claims reciting feature 17 are anticipated by the count. Nevertheless, as explained herein, Thomas has not shown that the claims would have been nonobvious.

Thomas again asserts that the count's computer system activates a fan based on a single interrupt signal, Paper 29 at 20, but does not explain *why* such functionality would preclude a person of ordinary skill in the art from modifying the system to have a multi-speed fan with fan speed dependent on temperature. In addition, Thomas fails to account for other prior art like Swamy, which takes periodic measurements of processor temperature and increases fan speed based on the changing temperature. Swamy, col. 7, ll. 10-60.

Thomas has not met its burden to demonstrate by a preponderance of the evidence that the involved claims reciting the feature of fan speed dependent on temperature would not have been obvious in light of the count and other applicable prior art.

CONCLUSION

For all of the foregoing reasons regarding the above-identified claim features, Thomas has not satisfied its burden of proof in showing that it is entitled to the relief requested, i.e., to have claims 24 and 25 of Thomas '557, claims 24-36, 41, 42, and 46-54 of Thomas '235, and claims 1-5, 12-23, and 37-52 of Thomas '668 designated as not corresponding to the count.

Thomas's Motion 1 is *denied*.

Interference No. 105,802
Thomas v. Pippin

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Filed: September 19, 2012

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

C. DOUGLASS **THOMAS** and ALAN E. THOMAS
Junior Party
(U.S. Pat. Nos. 7,167,993; 7,293,186; and 7,418,611)[1]

v.

JACK D. **PIPPIN**
Senior Party
(Application 10/464,482)[2]

Patent Interference No. 105,803 (JL)
(Technology Center 2100)

Before JAMESON LEE, MICHAEL R. ZECHER, and JUSTIN T. ARBES, *Administrative Patent Judges*.

ZECHER, *Administrative Patent Judge.*

[1] U.S. Pat. Nos. 7,167,993, 7,293,186, and 7,418,611 were accorded the benefit of patent application 08/262,754, filed June 20, 1994—now. U.S. Pat. No. 5,752,011. Paper 1. The real party in interest is IpVenture, Inc. Paper 15.
[2] Filed June 19, 2003. Patent application 10/464,482 was accorded the benefit of patent application 08/124,980, filed September 21, 1993. Paper 1. The real party in interest is Intel Corp. Paper 9.

Judgment – Merits – Bd. R. 127

In a concurrent paper, Thomas's Motion 1 (Paper 27) seeking to designate claims 20-29 of U.S. Pat. No. 7,167,993 as not corresponding to the count has been denied. There are no other pending motions in this interference. Thomas also indicated that as the junior party, it would not be filing a priority motion. Paper 23 at 2, 7. As such, Thomas concedes priority with respect to any claim left as corresponding to the count after consideration of Thomas's motion to designate claims as not corresponding to the count. *Id*. Accordingly, because Thomas's Motion 1 has been denied and all of Thomas's involved claims correspond to the count, it is now appropriate to enter judgment against junior party Thomas.

It is **ORDERED** that judgment with respect to Count 1 is entered against junior party C. DOUGLASS THOMAS and ALAN E. THOMAS.

It is **FURTHER ORDERED** that claims 1-29 of junior party's involved U.S. Pat. No. 7,167,993; claims 1-17 of junior party's involved U.S. Pat. No. 7,293,186; and claims 1-31 of junior party's involved U.S. Pat. No. 7,418,611, which correspond to Count 1, are cancelled.

It is **FURTHER ORDERED** that the parties shall note the requirements of 35 U.S.C. § 135(c) and Bd. R. 205.

It is **FURTHER ORDERED** that a copy of this judgment shall be entered into the files of U.S. Pat. Nos. 7,167,993, 7,293,186, and 7,418,611, and patent application 10/464,482.

Interference No. 105,803
Thomas v. Pippen

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

C. DOUGLASS **THOMAS** and ALAN E. THOMAS
Junior Party
(U.S. Pat. Nos. 7,167,993; 7,293,186; and 7,418,611)

v.

JACK D. **PIPPIN**
Senior Party
(Application 10/464,482)

Patent Interference No. 105,803 (JL)
(Technology Center 2100)

Before JAMESON LEE, MICHAEL R. ZECHER, and JUSTIN T. ARBES, *Administrative Patent Judges*.

ZECHER, *Administrative Patent Judge*.

Decision – Motion – Bd. R. 125(a)

This interference was declared on April 25, 2011. The sole pending motion is Thomas's Motion 1, which seeks to designate claims 20-29 of U.S. Pat. No. 7,167,993 ("Thomas '993") as not corresponding to the count.

Pippin filed an opposition to Thomas's Motion 1—Pippen's Opposition 1.[1] Because Thomas fails to demonstrate by a preponderance of the evidence that claims 20-29 of Thomas '993 should be designated as not corresponding to the count, Thomas's Motion 1 is *denied*.

FINDINGS OF FACT

The following Findings of Fact are supported by a preponderance of evidence.

1. Junior party Thomas is involved in this interference on the basis of three patents: 1) Thomas '993; 2) U.S. Patent No. 7,293,186 ("Thomas '186"); and 3) U.S. Patent No. 7,418,611 ("Thomas '611").

2. Senior party Pippin is involved in this interference on the basis of Patent Application No. 10/464,482, filed June 19, 2003.

3. Thomas's real party in interest is IpVenture, Inc. Paper 15 at 2.

4. Pippin's real party in interest is Intel Corp. Paper 9 at 2.

5. The sole count in this interference is defined as claim 34 of Pippin's Patent Application No. 10/464,482. Paper 11 at App'x. A.

6. Claim 34 of Pippin's Patent Application No. 10/464,482 reads as follows:

34. A computer system comprising:
an active cooling device;
a microprocessor comprising:
a register storing a register value corresponding to a

[1] All references to Pippen's Opposition 1 are to the Pippen's Corrected Opposition 1 (Paper 40) filed December 29, 2011, which replaced Pippen's Opposition 1 filed November 7, 2011 (Paper 33).

threshold temperature;

a programmable thermal sensor receiving the register value, wherein the programmable thermal sensor generates a first interrupt signal if a microprocessor temperature exceeds the threshold temperature,

wherein the active cooling device is activated in response to the interrupt signal, and

wherein the active cooling device comprises a fan; and

clock circuitry for providing a clock signal for the microprocessor,

wherein a frequency of the clock signal is reduced in response to the first interrupt signal.

Sheets—U.S. Patent No. 4,670,837

7. Sheets discloses determining the current rate of required microprocessor activity and varying the clock frequency of the microprocessor based on such rate. Abstract; col. 1, ll. 45-54; col. 3, ll. 18-21.

8. Sheets discloses that the "present invention is directed to reducing the amount of energy drawn by system 100 from . . . a [Direct Current] source," such as a battery. Col. 2, ll. 37-43.

9. Sheets discloses: "[Voltage-controlled oscillator] (VCO) 102 gradually adjusts the frequency of the clock signal transmitted to microprocessor 101 to the computed frequency in response to the digital word. Reducing the clock frequency reduces the power consumed by microprocessor 101 and, by reducing the required access rate to the associated devices, i.e., ROM 107, RAM 108, and I/O port 109, also reduces the power consumed by those devices. The

power reduction is substantially directly proportional to the reduction of the clock frequency. For example, a frequency reduction from 20 megahertz to 10 megahertz will result in a saving of approximately 50%." Col. 2, l. 65-col. 3, l. 8.

Georgiou—U.S. Patent No. 5,189,314

10. Georgiou discloses detecting processor activity and varying the clock frequency of the processor based on such activity. Abstract; col. 2, ll. 10-20, 40-41.

11. Georgiou discloses that "heat production is controlled in accordance with needs through changes in clock rate (i.e., by slowing down the clock rate when a circuit is idling), in order to make it possible to speed up the clock rate when performing either special critical work or useful work in general. . . ." Col. 2, ll. 10-16.

12. Georgiou discloses that "[w]hen a circuit is switched to a lower clock rate, there is a heat generation savings. Given a certain heat dissipation capacity (based on the characteristics of the chip and package), it is possible to switch the clock to a higher rate, if enough heat savings have been accumulated." Col. 2, ll. 20-25; col. 3, ll. 33-38.

Neal—U.S. Pat. No. 5,483,102

13. Neal discloses the thermal management of a semiconductor device and, in particular, reducing an internal clock frequency of the semiconductor device upon receiving a first signal indicating fan failure and/or a second signal indicating thermal overload. Col. 1, ll. 9-14

14. Neal discloses that fans for cooling semiconductor devices commonly employ a chip set to generate a motor pulse at a given frequency to

drive a fan motor. Col. 5, ll. 31-33. By altering the frequency of the motor pulse, Neal discloses that the fan is driven at various speeds, thereby increasing or decreasing the fan's airflow production. Col. 5, ll. 33-36.

Swamy—U.S. Pat. No. 5,623,594

15. Swamy discloses a cooling system for a computer and, in particular, an electrically conductive trace integrally formed in the circuit board of the computer for monitoring the temperature of a heat-producing electronic component mounted on the board. Col. 1, ll. 7-12.

16. Swamy discloses an overtemperature circuit that sends a signal to turn on a fan or increase the fan's speed if the fan is already on. Col. 6, ll. 55-58. Swamy also discloses that the overtemperature circuit sends a signal to a microprocessor clock to decrease the operational speed of the microprocessor clock. Col. 6, ll. 58-61.

17. Swamy discloses that attempts to reduce the temperature of an electronic component mounted on the circuit board are capable of being programmed to occur in several different combinations and may include additional steps, such as saving the current document and subsequently shutting down the operation of the microprocessor. Col. 6, l. 64-col. 7, l. 1.

Dinh—U.S. Pat. No. 5,526,289

18. Dinh discloses a fan cooling subsystem for a personal computer wherein the speed of the fan is adjustable based on the temperature within the housing of the personal computer. Col. 1, ll. 10-13.

19. Dinh discloses that it may be desirable to have two speeds for a fan: 1) when the computer's elements are operating at a low temperature, the fan

blows quietly at a low speed; and 2) when the computer's elements are hot, the fan blows rapidly and loudly at a high speed. Col. 1, ll. 29-35.

20. Dinh discloses that "there is need for a fan subsystem which can increase the fan speed proportionally to the increase in the temperature of the computer's elements." Col. 1, ll. 44-46.

Pippin—U.S. Patent No. 5,838,578 ("Pippin '578")

21. Application 08/660,016, which issued as Pippin '578, was filed on June 6, 1996.

22. Pippin '578 is a continuation of application 08/124,980, filed on September 21, 1993.

23. Pippin '578 issued on November 17, 1998.

24. Pippen '578 discloses thermal sensing and, in particular, programming a thermal sensor in an integrated circuit. Col. 1, ll. 10-12

25. Pippin '578 discloses generating an interrupt signal based on the temperature of a microprocessor exceeding a threshold temperature, activating an active cooling device such as a fan or other heat dissipating device, and reducing clock frequency in response to the interrupt signal. Col. 12, ll. 24-47.

ANALYSIS

Thomas's Motion 1 seeks to designate claims 20-29 of Thomas '993 as not corresponding to the count. Paper 27 at 4. Thomas as the moving party bears the burden of proof to establish entitlement to the relief requested. 37 C.F.R. § 41.121(b). A claim corresponds to a count if the subject matter of the count, treated as prior art to the claim, would have anticipated or rendered obvious the

subject matter of the claim. 37 C.F.R. § 41.207(b)(2). Thus, unlike a civil action for patent infringement where the moving defendant asserts that the claimed subject matter is anticipated or obvious, Thomas as the moving party bears the burden of establishing a negative, i.e., that the subject matter of the claims is not anticipated or obvious in light of the count and any other applicable prior art.

It is evident that the count, if treated as prior art, would not have anticipated any of the Thomas '993 claims that this motion seeks to designate as not corresponding to the count. Thus, the proper analysis is one of obviousness per *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966). The pertinent factual inquiries are: (1) the scope and content of the prior art; (2) the differences between the claimed invention and the prior art; (3) the level of ordinary skill in the art; and (4) any objective evidence of nonobviousness. *Id*. at 17. The conclusion of obviousness is reached from the perspective of the hypothetical person having ordinary skill in the art who is presumed to be aware of all pertinent prior art. *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 454 (Fed. Cir. 1985). Also, a person of ordinary skill in the art has ordinary creativity and is not an automaton. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). If a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Id*. at 417.

To prevail in its motion, Thomas must demonstrate by a preponderance of the evidence that each of the claims it seeks to designate as not corresponding to the count—in this case claims 20-29 of Thomas '993—would not have been

obvious to one of ordinary skill in the art, given the subject matter of the count as prior art and any other applicable prior art. Thomas identifies a number of claim features in claims 20-29 of Thomas '993 that allegedly distinguish from the count and other applicable prior art, and groups the involved claims accordingly. We address each claim feature and the involved claims in turn.

For all of the reasons discussed *infra*, Thomas has not satisfied its burden of proof that the collective differences between claims 20-29 of Thomas '993 it seeks to designate as not corresponding to the count and the subject matter of the count are such that the claims would not have been obvious over the count and any other applicable prior art.

Feature #1—Activity Detector/Monitoring Activity of Microprocessor

Thomas argues that claims 20 and 24 of Thomas '993 include the feature of activity detector/monitoring activity of microprocessor. Paper 27 at 10-11. For example, claim 20 of Thomas '993 recites, *inter alia*, "said thermal manager causes said fan speed and the clock to change in view of one or more temperature indications," while claim 24 of Thomas '993 recites, *inter alia*, an "activity detector identifies an activity level of said processor." *Id*. Thomas contends that claims 20 and 24 of Thomas '993 would not have been obvious over the count and any other applicable prior art based on this feature. Paper 27 at 12-17.

At the outset, we note that the count recites "a microprocessor comprising" a "programmable thermal sensor [that] generates a first interrupt signal if a microprocessor temperature exceeds the threshold temperature," and "wherein a frequency of the clock signal is reduced in response to the first interrupt signal." As such, the count discloses a microprocessor that includes a programmable

thermal sensor for monitoring the temperature therein and varying the clock frequency accordingly. The count does not vary the clock frequency based on the activity of the microprocessor. Therefore, the issue before us is whether Thomas demonstrates by a preponderance of the evidence that the involved claims, which include feature #1—activity detector/monitoring activity of microprocessor—would not have been obvious in light of a computer system as is recited in the count, which includes a microprocessor that varies clock frequency based on temperature, in combination with any other applicable prior art.

Thomas '993 discloses in the Background Section of the Invention that monitoring processor activity for the purpose of regulating processing speed was old and well known at the time. *See, e.g.*, Thomas '993, col. 1, ll. 27-36 ("It is also known to suspend or slow a computer's processor (e.g., microprocessor, CPU) when the processor is not actively processing."); *see also* Thomas Reply 1[2] (Paper 41 at 3) ("Dr. McNutt agreed only that activity detectors . . . are known in the art. . . ."). We conclude that it would have been readily apparent to one with ordinary skill in the art to incorporate such well known functionality into the microprocessor recited in the count, such that clock frequency could be varied based on temperature, microprocessor activity, or both.

Thomas points to testimony from its expert, Dr. Douglas P. McNutt, identifying Nakagawa (Japanese Patent Application 1990-83720, EX 2010) as "the closest prior art known with respect to the feature of frequency reduction,"

[2] All references to Thomas Reply 1 are to the Thomas Reply 1 (Substitute) (Paper 41) filed January 6, 2012, which replaced Thomas Reply 1 filed December 22, 2011 (Paper 36).

and Kenny (U.S. Patent No. 5,287,292) as "the closest prior art known with respect to the feature of activity monitoring." Paper 27 at 14-16. We disagree that Nakagawa and Kenny are the closest prior art references for purposes of feature #1. Indeed, Thomas admits that "[t]here is no activity detector in Nakagawa." Paper 27 at 14. Therefore, Nakagawa cannot be the closest prior art for claims 20 and 24 of Thomas '993, which include feature #1.

The prior art references cited by Pippin—Sheets and Georgiou—are more relevant to claims 20 and 24 of Thomas '993, which include feature #1 and, therefore, reflect the level of ordinary skill in the art at the time. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (agreeing with the Board's conclusion that "the level of ordinary skill in the art . . . was best determined by appeal to the references of record"). Sheets discloses detecting processor activity and reducing clock frequency in times of low activity. Col. 1, ll. 45-54. By doing so, Sheets reduces the consumption of power from a battery. Col. 2, ll. 37-43; col. 2, l. 65-col. 3, l. 8. This is the same reason given in Thomas '993 for varying clock frequency based on processor activity. *See* Col. 5, ll. 27-29. Georgiou similarly discloses reducing clock frequency in times of low activity to reduce heat generation, and increasing clock frequency "if enough heat savings have been accumulated." Abstract; col. 2, ll. 8-28; col. 3, ll. 33-38. Therefore, we find that both Sheets and Georgiou teach varying clock frequency based on processor activity in order to: 1) conserve battery life; and 2) reduce heat generation in times of low activity and increase performance speed when possible.

Thomas has not presented sufficient evidence that a person of ordinary skill

in the art would not have found it obvious, in light of the count, and the other prior art discussed *supra*, to vary clock frequency based on temperature, microprocessor activity, or both. That is, we conclude that a person of ordinary skill in the art would have readily combined the known feature of varying clock frequency based on processor activity, as taught in Sheets and Georgiou, with the known feature of a microprocessor that varies clock frequency based on temperature, as is recited in the count, to arrive at the subject matter of the involved claims including feature #1. That combination would have been nothing more than a simple combination of familiar elements according to known methods that yields a predictable result. *See KSR*, 550 U.S. at 416. In addition, a person of ordinary skill in the art would have appreciated that the proposed combination conserves battery life, reduces heat generation, and improves performance speed, as taught by Sheets and Georgiou. Further, we see no reason why monitoring the activity of a microprocessor and varying clock frequency based on temperature, microprocessor activity, or both would have been uniquely challenging or otherwise beyond the level of an ordinarily skilled artisan. *See KSR*, 550 U.S. at 421 (an improved product in the art is obvious if that "product [is] not [one] of innovation but of ordinary skill and common sense"); *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007). One with ordinary skill in the art is a person of ordinary creativity, not an automaton. *KSR*, 550 U.S. at 421.

Further, Thomas's arguments regarding the scope of the prior art, including the count, are unpersuasive. Paper 27 at 12-13. Thomas argues that the computer system recited in the count is limited in various respects such that it would not

have been obvious to a person of ordinary skill in the art to combine it with the prior art disclosing activity detection and clock frequency variation based on processor activity. *Id*. We disagree that the scope of what the count would have suggested to a person of ordinary skill in the art is so limiting, as it is the count itself rather than Pippin's disclosure that is deemed prior art for purposes of our analysis. A person of ordinary skill in the art is presumed to have skills apart from what a prior art reference explicitly says. *See KSR*, 550 U.S. at 418. Further, assuming arguendo that the count's programmable thermal sensor is limited in the manner argued by Thomas (Paper 27 at 13), Thomas has not adequately explained why this claim limitation would prevent a skilled artisan from using his or her ordinary skill to combine it with other prior art. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981) ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.").

As to Sheets and Georgiou specifically, Thomas argues that the references are cumulative and were considered during prosecution of Thomas '993. Paper 41 at 6. We disagree that the references are cumulative to other references discussed herein. Also, whether the Examiner considered them during prosecution of Thomas '993 does not change our view with respect to their disclosure. The references are indicative of the level of ordinary skill in the art at the time. Further, Thomas argues that Sheets and Georgiou relate only to decreasing clock frequency when processor activity is low (e.g., when the

processor is "idle") and, therefore, would not have suggested claims 20 and 24 of Thomas '993 directed to "a thermal management solution that protects a computer when it is in danger of overheating." Paper 41 at 7. We do not see, and Thomas has not pointed us to, any limitation in claims 20 and 24 of Thomas '993 requiring a particular "thermal management solution," or any reason why these claims would not cover varying clock frequency based on a lower microprocessor activity rate.

Thomas has not sufficiently demonstrated by a preponderance of the evidence that claims 20 and 24 of Thomas '993, which includes feature #1—activity detector/monitoring activity of microprocessor—would not have been obvious in light of the microprocessor that varies clock frequency based on temperature, as recited in the count, and any other applicable prior art.

Feature #14—Multi-Speed Fan/Multiple Speeds of Operation/Fast-Slow Fan Speeds

Thomas argues that claims 20 and 29 of Thomas '993 include the feature of multi-speed fan/multiple speeds of operation/fast-slow fan speeds. Paper 27 at 18. Claim 20 of Thomas '993 recites, *inter alia*, "a multiple speed fan," and "chang[ing] from slow speed to a fast speed before causing a reduction in the clock rate." Claim 29 of Thomas '993 recites, *inter alia*, "a multiple speed fan" and "first and second fan speeds for said fan are invoked by said fan activation means before supplemental thermal management by said clock controller causes reduction in the clock frequency." *Id*. Thomas contends that claims 20 and 29 of Thomas '993 would not have been obvious over the count and any other applicable prior art based on this feature. Paper 27 at 18-19.

At the outset, we note that the count recites "wherein the active cooling device comprises a fan." However, the fan recited in the count does not have multiple speeds of operation (e.g., a fast and slow speed). Therefore, the issue before us is whether Thomas demonstrates by a preponderance of the evidence that the involved claims, which include feature #14—multi-speed fan/multiple speeds of operation/fast-slow fan speeds—would not have been obvious in light of the fan recited in the count in combination with any other applicable prior art. With this in mind, we turn to the merits of Thomas's arguments.

Thomas argues that Pippen fails to teach or suggest any ability to provide different cooling actions at different temperatures to provide intelligent cooling. Paper 27 at 18. According to Thomas, the two-stage cooling approach recited in claims 20 and 29 of Thomas '993 can effectively manage thermal conditions in a performance maintaining manner through initial usage of the fan. *Id*. Thomas alleges that because Pippen uses a single temperature threshold to generate a first interrupt signal, which directs both fan activation and clock frequency reduction, it is not possible to separate these two different actions by time and temperature. Paper 27 at 18 (citing EX 2001 ¶ 43).

We are not persuaded by Thomas's arguments because they are not commensurate in scope with feature #14. That is, Thomas's argument with respect to the two-stage cooling approach recited in claims 20 and 29 of Thomas '993 has no bearing on whether the fan recited in the count is incapable of being combined with any other applicable prior art to render obvious a multi-speed fan that can operate at a fast and slow speed. Put another way, Thomas's arguments do not address why the fan recited in the count is incapable of being combined

with any other applicable prior art, such that the fan can provide different cooling actions (*e.g.*, operating at a fast and slow speed) at different temperatures to provide intelligent cooling.

Next, Thomas points to testimony from its expert, Dr. McNutt, identifying Neal (U.S. Pat. No. 5,483,102) as "the closest prior art known with respect to controlling frequency and fan speed." Paper 27 at 18. Thomas argues that because Neal's fan is always on unless it fails, Neal does not teach fan speed control. Paper 27 at 19 (citing EX 2001 ¶ 44). However, contrary to Thomas's argument, we note that Neal discloses using the frequency of a motor pulse to drive the various speeds of a fan, thereby increasing or decreasing airflow production. Col. 5, ll. 31-36. Consequently, Neal not only teaches fan speed control, but also teaches that the fan has multiple speeds of operation. We find that a person of ordinary skill in the art would have recognized combining the known elements of controlling multiple fan speeds, as taught by Neal, with the fan, as recited in the count, in order to arrive at the involved claims including feature #14. This would have been nothing more than a simple combination of familiar elements according to known methods that yields a predictable result. *See KSR*, 550 U.S. at 416.

Moreover, the prior art references cited by Pippen—specifically Dinh—are also relevant to claims 20 and 29 of Thomas '993, which include feature #14. Paper 40 at 19-20. Dinh discloses that the speed of a fan is adjustable based on the temperature within the housing of a personal computer. Col. 1, ll. 10-13. In particular, Dinh discloses that it is desirable to have two fan speeds—a low and high speed. Col. 1, ll. 29-35. As such, Dinh teaches a multi-speed fan that can

operate at a low and high speed. We find that a person of ordinary skill in the art would have appreciated combining Dinh's multi-speed fan that can operate at low and high speed, with the fan recited in the count, in order to arrive at the involved claims including feature #14. We conclude that a person of ordinary skill in the art would have been motivated to make the proffered combination because Dinh explicitly discloses a need in the art for "a fan [] which can increase the fan speed proportionally to the increase in the temperature of [a] computer's elements." Col. 1, ll. 44-46.

It follows that Thomas has not sufficiently demonstrated by a preponderance of the evidence that claims 20 and 29 of Thomas '993, which include feature #14—a multi-speed fan that can operate at a fast and slow speed—would not have been obvious in light of the fan recited in the count and the other applicable prior art discussed *supra*.

Feature #49—Multiple Fan Speeds Used Before Reducing Clock Frequency

Thomas presents the same arguments with respect to feature #14 in order to demonstrate that claims 20 and 29 of Thomas '993, which also include feature #49, would not have been obvious over the count and any other applicable prior art. Paper 27 at 18. Nonetheless, we note that features #14 and #49 differ in scope. That is, feature #14 is directed to multiple fan speeds (e.g., fast and slow speeds), whereas feature #49 not only includes multiple fan speeds, but also entails using multiple fan speeds before reducing clock frequency. Therefore, because features #14 and #49 differ in scope, we will separately address Thomas's arguments focusing solely upon feature #49.

At the outset, we note that the count recites "the active cooling device is

activated in response to the interrupt signal, and wherein the active cooling device comprises a fan." The count also recites that "a frequency of the clock signal is reduced in response to the first interrupt signal." While the count recites that the interrupt signal is used to both activate the fan and reduce the clock frequency, it does not explicitly recite whether the interrupt signal activates the fan before or after it reduces the clock frequency, or whether the interrupt signal activates the fan and reduces the clock frequency concurrently. As a result, under the broadest reasonable interpretation standard, we conclude that the count does not preclude using the interrupt signal to activate the fan before reducing the clock frequency. Therefore, the issue before us is whether Thomas demonstrates by a preponderance of the evidence that the involved claims, which include feature #49—using multiple fan speeds before reducing clock frequency—would not have been obvious in light of activating the fan before reducing the clock frequency, as recited in the count, in combination with any other applicable prior art. With this in mind, we turn to the merits of Thomas's arguments.

We are not persuaded by Thomas's argument that because Pippin uses a single temperature threshold to generate a first interrupt signal, which directs both fan activation and clock frequency reduction, it is not possible to separate these two different actions by time or temperature. Paper 27 at 18 (citing EX2001 ¶ 43). Based on our claim construction of the count set forth *supra*, we conclude that the count does not preclude using the interrupt signal to activate the fan before reducing the clock frequency. Therefore, contrary to Thomas's argument, the count itself, according to its broadest reasonable interpretation, would have suggested that the two actions can occur sequentially.

Next, Thomas points to testimony from its expert, Dr. McNutt, identifying Neal as "the closes prior art known with respect to controlling frequency and fan speed." Paper 27 at 18. However, based on our analysis set forth with respect to feature #14, Neal not only teaches fan speed control, but also teaches that the fan has multiple speeds of operation. *See* col. 5, ll. 31-36. We conclude that a person of ordinary skill in the art would have readily combined the known elements of controlling multiple fan speeds, as taught by Neal, with activating the fan before reducing the clock frequency, as recited in the count, in order to arrive at the involved claims including feature #49. That would have been nothing more than a simple combination of familiar elements according to known methods that yields a predictable result. *See KSR*, 550 U.S. at 416.

Moreover, the prior art references cited by Pippen—namely Swamy and Pippen '578—are also relevant to claims 20 and 29 of Thomas '993, which include feature #49. Paper 40 at 18-21. Swamy discloses monitoring the temperature of a heat-producing electronic component mounted on a circuit board. Col. 1, ll. 7-12. In particular, Swamy discloses a circuit that sends a signal to increase fan speed if the fan is already on, and sends a signal to a microprocessor clock to decrease the operational speed of the microprocessor clock. Col. 6, ll. 55-61. Further, Swamy discloses that attempts to reduce the temperature are capable of being programmed to occur in several different combinations. Col. 6, l. 64-col. 7, l. 1. Given that Swamy explicitly contemplates reducing the temperature using several different combinations, we find an ordinarily skilled artisan would have understood that Swamy is capable of sending a signal to increase the fan speed before reducing the processor clock

frequency.

Even assuming arguendo that the broadest reasonable interpretation of the count precludes using the interrupt signal to activate the fan before reducing the clock frequency, a person of ordinary skill in the art would have appreciated modifying the count with Swamy's technique in order to arrive at the involved claims including feature #49. Because Swamy's technique was used to improve a circuit (col. 1, ll. 7-12), and a person of ordinary skill in the art would have recognized that it would improve a computer system in the same way, modifying the count with Swamy's technique would have been obvious unless its actual application is beyond his or her skill. *See KSR*, 550 U.S. at 417. We see no reason why modifying the count to provide for Swamy's technique would have been uniquely challenging or otherwise beyond the level of an ordinarily skilled artisan. *See Leapfrog*, 485 F.3d at 1162.

In addition, Pippen '578 discloses using an interrupt signal to activate a fan and reduce clock frequency. Col. 12, ll. 24-27. Given the finite number of identified, predictable ways Pippen '578 can use the interrupt signal to activate the fan and reduce the clock frequency, we conclude that it would have been obvious to an ordinarily skilled artisan to activate the fan by increasing the speed before reducing the clock frequency. Moreover, we conclude that a person of ordinary skill in the art would have appreciated modifying the count with Pippen '578's technique in order to arrive at the involved claims including feature #49. Because Pippen '578's technique was used to improve an integrated circuit (col. 1, ll. 10-12), and a person of ordinary skill in the art would recognize that it would improve a computer system in the same way, modifying the count to

provide for Pippen '578's technique is obvious unless its actual application is beyond his or her skill. *See KSR*, 550 U.S. at 417. We see no reason why modifying the count with Pippen '578's technique would have been uniquely challenging or otherwise beyond the level of an ordinarily skilled artisan. *See Leapfrog*, 485 F.3d at 1162.

It follows that Thomas has not sufficiently demonstrated by a preponderance of the evidence that claims 20 and 29 of Thomas '933, which include feature #49—using multiple fan speeds before reducing clock frequency—would not have been obvious in light of activating the fan before reducing the clock frequency, as recited in the count, and the other applicable prior art discussed *supra*.

CONCLUSION

For all of the foregoing reasons regarding the above-identified claim features, Thomas has not satisfied its burden of proof in showing that it is entitled to the relief requested, i.e., to have claims 20-29 of Thomas '993 designated as not corresponding to the count.

Thomas's Motion 1 is *denied*.

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Thomas v. Pippin

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CERTIFICATE OF FILING AND SERVICE

I hereby certify that on this 9th day of April, 2013, I caused this Corrected Brief of Appellants to be filed electronically with the Clerk of the Court using the CM/ECF System, which will send notice of such filing to the following registered CM/ECF users:

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Upon acceptance by the Clerk of the Court of the electronically filed document, the required number of copies of the Corrected Brief of Appellants will be hand filed at the Office of the Clerk, United States Court of Appeals for the Federal Circuit in accordance with the Federal Circuit Rules.

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Dated: April 9, 2013

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